

CAIR (Form)

CONTAINS NO CBI



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EPA-OTS



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89 JUN -7 PM 2:05
OTS REPORTING CONTROL
OFFICE

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Comprehensive Assessment Information Rule

REPORTING FORM

When completed, send this form to:

Document Processing Center
Office of Toxic Substances, TS-790
U.S. Environmental Protection Agency
401 M Street, SW
Washington, DC 20460
Attention: CAIR Reporting Office

For Agency Use Only:

Date of Receipt: _____

Document
Control Number: _____

Docket Number: _____

SECTION 1 GENERAL MANUFACTURER, IMPORTER, AND PROCESSOR INFORMATION

PART A GENERAL REPORTING INFORMATION

1.01 This Comprehensive Assessment Information Rule (CAIR) Reporting Form has been completed in response to the Federal Register Notice of..... [1][2] [2][2] [8][8]
CBI mo. day year

- ☐ a. If a Chemical Abstracts Service Number (CAS No.) is provided in the Federal Register, list the CAS No. [0][2][6][4][7][1]-[6][2]-[5]
- b. If a chemical substance CAS No. is not provided in the Federal Register, list either (i) the chemical name, (ii) the mixture name, or (iii) the trade name of the chemical substance as provided in the Federal Register.
- (i) Chemical name as listed in the rule CAS provided
- (ii) Name of mixture as listed in the rule CAS provided
- (iii) Trade name as listed in the rule CAS provided
- c. If a chemical category is provided in the Federal Register, report the name of the category as listed in the rule, the chemical substance CAS No. you are reporting on which falls under the listed category, and the chemical name of the substance you are reporting on which falls under the listed category.
- Name of category as listed in the rule No Category Listed
- CAS No. of chemical substance [][][][][][]-[][]-[][]
- Name of chemical substance No Category Listed

- 1.02 Identify your reporting status under CAIR by circling the appropriate response(s).
- CBI Manufacturer 1
- ☐ Importer 2
- Processor ③
- X/P manufacturer reporting for customer who is a processor 4
- X/P processor reporting for customer who is a processor 5

☐ Mark (X) this box if you attach a continuation sheet.

1.03 Does the substance you are reporting on have an "x/p" designation associated with it in the above-listed Federal Register Notice?

CBI

Yes ☒ Go to question 1.04

☐

No ☐ Go to question 1.05

1.04 a. Do you manufacture, import, or process the listed substance and distribute it under a trade name(s) different than that listed in the Federal Register Notice? Circle the appropriate response.

CBI

Yes ☒ ①

☐

No 2

b. Check the appropriate box below:

☒ You have chosen to notify your customers of their reporting obligations

Provide the trade name(s) Pliogrip 6000

Pliogrip 6022 Semkit (Cartridge containing Pliogrip 6000)

☐ You have chosen to report for your customers

☐ You have submitted the trade name(s) to EPA one day after the effective date of the rule in the Federal Register Notice under which you are reporting.

1.05 If you buy a trade name product and are reporting because you were notified of your reporting requirements by your trade name supplier, provide that trade name.

CBI

Trade name Mondur TD-80

☐

Is the trade name product a mixture? Circle the appropriate response.

Yes 1

No ②

1.06 Certification -- The person who is responsible for the completion of this form must sign the certification statement below:

CBI

"I hereby certify that, to the best of my knowledge and belief, all information entered on this form is complete and accurate."

☐

David A. Tobolski
NAME

David A. Tobolski
SIGNATURE

6-2-89
DATE SIGNED

Plant Manager
TITLE

(419) 289 - 9588
TELEPHONE NO.

☐ Mark (X) this box if you attach a continuation sheet.

PART B CORPORATE DATA

1.09 Facility Identification

CBI Name [A][S][H][L][A][N][D][][C][H][E][M][I][C][A][L][][C][O][M][P][A][N][Y][][]
[] Address [1][7][4][5][][C][O][T][T][A][G][E][][S][T][R][E][E][T][][][][][]
Street
[A][S][H][L][A][N][D][][][][][][][][][][][][][][][][][][]
City
[O][H][][4][4][8][0][5][]--[][][][]
State Zip
Dun & Bradstreet Number[1][0]-[8][6][2]-[3][1][2][5]
EPA ID Number[0][7][1][1][1][4][3][7][5]
Employer ID NumberUK.[][][][][][][][]
Primary Standard Industrial Classification (SIC) Code[2][8][6][9]
Other SIC Code[][][][]
Other SIC Code[][][][]

1.10 Company Headquarters Identification

CBI Name [A][S][H][L][A][N][D][][C][H][E][M][I][C][A][L][][C][O][M][P][A][N][Y][][]
[] Address [5][2][0][0][][B][L][A][Z][E][R][][P][A][R][K][W][A][Y][][][][][]
Street
[D][U][B][L][I][N][][][][][][][][][][][][][][][][][][]
City
[O][H][][4][3][0][1][7][]--[][][][]
State Zip
Dun & Bradstreet Number[0][4]-[4][0][4]-[6][2][7][4]
Employer ID NumberUK.[][][][][][][][]

[] Mark (X) this box if you attach a continuation sheet.

1.11 Parent Company Identification

CBI Name [A][S][H][L][A][N][D] [O][I][L] []
[][] Address [1][4][0][1] [W][I][N][C][H][E][S][T][E][R] [A][V][E][N][U][E] [][][]
Street
[A][S][H][L][A][N][D] []
City
[K][Y] [4][1][1][1][4]--[][][][]
State Zip
Dun & Bradstreet Number [0][0]-[5][0][0]-[3][2][6][4]

1.12 Technical Contact

CBI Name [J][O][Y][C][E] [A] [M][O][N][D][A][K]
[] Title [P][R][O][C][E][S[S]] [E][N][G][I][N][E][E][R]
Address [1][7][4][5] [C][O][T][T][A][G][E] [S][T][R][E][E][T]
Street
 [A][S][H][L][A][N][D]
City
[OH] [4][4][8][0][5]--[][][]
State Zip
Telephone Number [4][1][9]-[2][8][9]-[9][5][8][8]

1.13 This reporting year is from [1][0] [8][7] to [0][9] [8][8]
Mo. Year Mo. Year

☐ Mark (X) this box if you attach a continuation sheet.

1.14 Facility Acquired -- If you purchased this facility during the reporting year, provide the following information about the seller:

NOT APPLICABLE

[illegible][illegible]

Street

() () () () () () () () () ()

City

[][] [][][][][]--[][][][]
State Zip

State

Zip

Employer ID Number() () () () () () () ()

Date of Sale () () () () () ()
Mo. Day Year

Mo.

Day

Year

[illegible]

Telephone Number[][][]-[][][]-[][][][]

1.15 Facility Sold -- If you sold this facility during the reporting year, provide the following information about the buyer:

NOT APPLICABLE

[illegible][illegible]

Street

[illegible]

City

 --
 State Zip

State

Zip

Employer ID Number() () () () () () () ()

Date of Purchase () () () () () ()
Mo. Day Year

Mo.

Day

Year

[illegible]

Telephone Number() () () -() () () -() () () ()

☐ Mark (X) this box if you attach a continuation sheet.

1.16 For each classification listed below, state the quantity of the listed substance that was manufactured, imported, or processed at your facility during the reporting year.

CBI

☐ Classification Quantity (kg/yr)

Manufactured - 0 -

Imported - 0 -

Processed (include quantity repackaged) 34,500

Of that quantity manufactured or imported, report that quantity:

In storage at the beginning of the reporting year Not Applicable

For on-site use or processing Not Applicable

For direct commercial distribution (including export) Not Applicable

In storage at the end of the reporting year Not Applicable

Of that quantity processed, report that quantity:

In storage at the beginning of the reporting year 18,670

Processed as a reactant (chemical producer) 2,800

Processed as a formulation component (mixture producer) 31,700

Processed as an article component (article producer) - 0 -

Repackaged (including export) - 0 -

In storage at the end of the reporting year 749

☐ Mark (X) this box if you attach a continuation sheet.

PART C IDENTIFICATION OF MIXTURES

1.17 Mixture -- If the listed substance on which you are required to report is a mixture or a component of a mixture, provide the following information for each component chemical. (If the mixture composition is variable, report an average percentage of each component chemical for all formulations.)

CBI

☐

Component Name	Supplier Name	Average % Composition by Weight (specify precision, e.g., 45% \pm 0.5%)
NOT APPLICABLE		
		Total 100%

☐ Mark (X) this box if you attach a continuation sheet.

2.04 State the quantity of the listed substance that your facility manufactured, imported, or processed during the 3 corporate fiscal years preceding the reporting year in descending order.

CBI

<input type="checkbox"/> Year ending	[0] [9]	[8] [7]	
	Mo.	Year	
Quantity manufactured	- 0 -		kg
Quantity imported	- 0 -		kg
Quantity processed	112,700		kg
Year ending	[0] [9]	[8] [6]	
	Mo.	Year	
Quantity manufactured	- 0 -		kg
Quantity imported	- 0 -		kg
Quantity processed	102,300		kg
Year ending	[0] [9]	[8] [5]	
	Mo.	Year	
Quantity manufactured	- 0 -		kg
Quantity imported	- 0 -		kg
Quantity processed	137,700		kg

2.05 Specify the manner in which you manufactured the listed substance. Circle all appropriate process types.

CBI

NOT APPLICABLE

<input type="checkbox"/> Continuous process	1
Semicontinuous process	2
Batch process	3

☐ Mark (X) this box if you attach a continuation sheet.

2.06 Specify the manner in which you processed the listed substance. Circle all appropriate process types.

- ☐ Continuous process 1
- ☐ Semicontinuous process 2
- ☐ Batch process (3)

2.07 State your facility's name-plate capacity for manufacturing or processing the listed substance. (If you are a batch manufacturer or batch processor, do not answer this question.)

NOT APPLICABLE

- ☐ Manufacturing capacity kg/yr
- ☐ Processing capacity kg/yr

2.08 If you intend to increase or decrease the quantity of the listed substance manufactured, imported, or processed at any time after your current corporate fiscal year, estimate the increase or decrease based upon the reporting year's production volume.

	Manufacturing Quantity (kg)	Importing Quantity (kg)	Processing Quantity (kg)
Amount of increase	- 0 -	- 0 -	- 0 -
Amount of decrease	- 0 -	- 0 -	34,500

☐ Mark (X) this box if you attach a continuation sheet.

2.09 For the three largest volume manufacturing or processing process types involving the listed substance, specify the number of days you manufactured or processed the listed substance during the reporting year. Also specify the average number of hours per day each process type was operated. (If only one or two operations are involved, list those.)

CBI

☐

Days/Year Average
Hours/Day

Process Type #1 (The process type involving the largest quantity of the listed substance.)

Manufactured	<u>- 0 -</u>	<u>- 0 -</u>
Processed	<u>60</u>	<u>10.4</u>

Process Type #2 (The process type involving the 2nd largest quantity of the listed substance.)

Manufactured	<u>- 0 -</u>	<u>- 0 -</u>
Processed	<u>66</u>	<u>2.6</u>

Process Type #3 (The process type involving the 3rd largest quantity of the listed substance.)

Manufactured	<u>- 0 -</u>	<u>- 0 -</u>
Processed	<u>NA</u>	<u>NA</u>

2.10 State the maximum daily inventory and average monthly inventory of the listed substance that was stored on-site during the reporting year in the form of a bulk chemical.

CBI

☐

RESPONSE NOT REQUIRED FOR TDI.

Maximum daily inventory	_____	kg
Average monthly inventory	_____	kg

☐ Mark (X) this box if you attach a continuation sheet.

- 2.11 Related Product Types -- List any byproducts, coproducts, or impurities present with the listed substance in concentrations greater than 0.1 percent as it is manufactured, imported, or processed. The source of byproducts, coproducts, or impurities means the source from which the byproducts, coproducts, or impurities are made or introduced into the product (e.g., carryover from raw material, reaction product, etc.).

CBI

☐

<u>CAS No.</u>	<u>Chemical Name</u>	<u>Byproduct, Coproduct or Impurity¹</u>	<u>Concentration (%) (specify ± % precision)</u>	<u>Source of By-products, Coproducts, or Impurities</u>
<u>UK</u>	<u>UK</u>	<u>I</u>	<u>0.15 (+ 0.15)</u>	<u>UK</u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>

¹Use the following codes to designate byproduct, coproduct, or impurity:

B = Byproduct
C = Coproduct
I = Impurity

☐ Mark (X) this box if you attach a continuation sheet.

- 2.12 Existing Product Types -- List all existing product types which you manufactured, imported, or processed using the listed substance during the reporting year. List the quantity of listed substance you use for each product type as a percentage of the total volume of listed substance used during the reporting year. Also list the quantity of listed substance used captively on-site as a percentage of the value listed under column b., and the types of end-users for each product type. (Refer to the instructions for further explanation and an example.)

CBI

☐

a. Product Types ¹	b. % of Quantity Manufactured, Imported, or Processed	c. % of Quantity Used Captively On-Site	d. Type of End-Users ²
B	92	0	I
B	8	100	I

¹Use the following codes to designate product types:

A = Solvent	L = Moldable/Castable/Rubber and additives
B = Synthetic reactant	M = Plasticizer
C = Catalyst/Initiator/Accelerator/ Sensitizer	N = Dye/Pigment/Colorant/Ink and additives
D = Inhibitor/Stabilizer/Scavenger/ Antioxidant	O = Photographic/Reprographic chemical and additives
E = Analytical reagent	P = Electrodeposition/Plating chemicals
F = Chelator/Coagulant/Sequestrant	Q = Fuel and fuel additives
G = Cleanser/Detergent/Degreaser	R = Explosive chemicals and additives
H = Lubricant/Friction modifier/Antiwear agent	S = Fragrance/Flavor chemicals
I = Surfactant/Emulsifier	T = Pollution control chemicals
J = Flame retardant	U = Functional fluids and additives
K = Coating/Binder/Adhesive and additives	V = Metal alloy and additives
	W = Rheological modifier
	X = Other (specify) _____

²Use the following codes to designate the type of end-users:

I = Industrial	CS = Consumer
CM = Commercial	H = Other (specify) _____

☐ Mark (X) this box if you attach a continuation sheet.

- 2.13 Expected Product Types -- Identify all product types which you expect to manufacture, import, or process using the listed substance at any time after your current corporate fiscal year. For each use, specify the quantity you expect to manufacture, import, or process for each use as a percentage of the total volume of listed substance used during the reporting year. Also list the quantity of listed substance used captively on-site as a percentage of the value listed under column b., and the types of end-users for each product type. (Refer to the instructions for further explanation and an example.)

CBI

☐

a.	b.	c.	d.
Product Types ¹	% of Quantity Manufactured, Imported, or Processed	% of Quantity Used Captively On-Site	Type of End-Users ²
NOT APPLICABLE - Use of Listed Substance Discontinued During Reporting Year			
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

¹Use the following codes to designate product types:

A = Solvent	L = Moldable/Castable/Rubber and additives
B = Synthetic reactant	M = Plasticizer
C = Catalyst/Initiator/Accelerator/ Sensitizer	N = Dye/Pigment/Colorant/Ink and additives
D = Inhibitor/Stabilizer/Scavenger/ Antioxidant	O = Photographic/Reprographic chemical and additives
E = Analytical reagent	P = Electrodeposition/Plating chemicals
F = Chelator/Coagulant/Sequestrant	Q = Fuel and fuel additives
G = Cleanser/Detergent/Degreaser	R = Explosive chemicals and additives
H = Lubricant/Friction modifier/Antiwear agent	S = Fragrance/Flavor chemicals
I = Surfactant/Emulsifier	T = Pollution control chemicals
J = Flame retardant	U = Functional fluids and additives
K = Coating/Binder/Adhesive and additives	V = Metal alloy and additives
	W = Rheological modifier
	X = Other (specify) _____

²Use the following codes to designate the type of end-users:

I = Industrial	CS = Consumer
CM = Commercial	H = Other (specify) _____

☐ Mark (X) this box if you attach a continuation sheet.

2.14 Final Product -- Complete the following table for each type of final product manufactured, imported, or processed at your facility that contains the listed substance other than as an impurity.

☐

a.	b.	c.	d.
Product Type ¹	Final Product's Physical Form ²	Average % Composition of Listed Substance in Final Product	Type of End-Users ³
B	B	14.5	I

¹Use the following codes to designate product types:

A = Solvent	L = Moldable/Castable/Rubber and additives
B = Synthetic reactant	M = Plasticizer
C = Catalyst/Initiator/Accelerator/Sensitizer	N = Dye/Pigment/Colorant/Ink and additives
D = Inhibitor/Stabilizer/Scavenger/Antioxidant	O = Photographic/Reprographic chemical and additives
E = Analytical reagent	P = Electrodeposition/Plating chemicals
F = Chelator/Coagulant/Sequestrant	Q = Fuel and fuel additives
G = Cleanser/Detergent/Degreaser	R = Explosive chemicals and additives
H = Lubricant/Friction modifier/Antiwear agent	S = Fragrance/Flavor chemicals
I = Surfactant/Emulsifier	T = Pollution control chemicals
J = Flame retardant	U = Functional fluids and additives
K = Coating/Binder/Adhesive and additives	V = Metal alloy and additives
	W = Rheological modifier
	X = Other (specify) _____

²Use the following codes to designate the final product's physical form:

A = Gas	F2 = Crystalline solid
B = Liquid	F3 = Granules
C = Aqueous solution	F4 = Other solid
D = Paste	G = Gel
E = Slurry	H = Other (specify) _____
F1 = Powder	

³Use the following codes to designate the type of end-users:

I = Industrial	CS = Consumer
CM = Commercial	H = Other (specify) _____

☐ Mark (X) this box if you attach a continuation sheet.

2.15 Circle all applicable modes of transportation used to deliver bulk shipments of the
CBI listed substance to off-site customers.

☐ NOT APPLICABLE - No Bulk Shipments

Truck	1
Railcar	2
Barge, Vessel	3
Pipeline	4
Plane	5
Other (specify)	6

2.16 Customer Use -- Estimate the quantity of the listed substance used by your customers
CBI or prepared by your customers during the reporting year for use under each category
of end use listed (i-iv).

☐

Category of End Use

i. Industrial Products

Chemical or mixture	31,700	kg/yr
Article	NA	kg/yr

ii. Commercial Products

Chemical or mixture	NA	kg/yr
Article	NA	kg/yr

iii. Consumer Products

Chemical or mixture	NA	kg/yr
Article	NA	kg/yr

iv. Other

Distribution (excluding export)	NA	kg/yr
Export	NA	kg/yr
Quantity of substance consumed as reactant	NA	kg/yr
Unknown customer uses	NA	kg/yr

☐ Mark (X) this box if you attach a continuation sheet.

SECTION 3 PROCESSOR RAW MATERIAL IDENTIFICATION

PART A GENERAL DATA

- 3.01 Specify the quantity purchased and the average price paid for the listed substance for each major source of supply listed. Product trades are treated as purchases.
CBI The average price is the market value of the product that was traded for the listed substance.

☐

<u>Source of Supply</u>	<u>Quantity (kg)</u>	<u>Average Price (\$/kg)</u>
The listed substance was manufactured on-site.	NA	NA
The listed substance was transferred from a different company site.	NA	NA
The listed substance was purchased directly from a manufacturer or importer.	16,500	2.57
The listed substance was purchased from a distributor or repackager.	NA	NA
The listed substance was purchased from a mixture producer.	NA	NA

- 3.02 Circle all applicable modes of transportation used to deliver the listed substance to your facility.

☐

Truck	1
Railcar	2
Barge, Vessel	3
Pipeline	4
Plane	5
Other (specify) _____	6

☐ Mark (X) this box if you attach a continuation sheet.

3.03 a. Circle all applicable containers used to transport the listed substance to your
CBI facility.

☐

Bags 1
Boxes 2
Free standing tank cylinders 3
Tank rail cars 4
Hopper cars 5
Tank trucks (6)
Hopper trucks 7
Drums (8)
Pipeline 9
Other (specify) 10

b. If the listed substance is transported in pressurized tank cylinders, tank rail cars, or tank trucks, state the pressure of the tanks.

Tank cylinders NA mmHg
Tank rail cars NA mmHg
Tank trucks 1250-1800 mmHg

☐ Mark (X) this box if you attach a continuation sheet.

PART B RAW MATERIAL IN THE FORM OF A MIXTURE

3.04 If you obtain the listed substance in the form of a mixture, list the trade name(s) of the mixture, the name of its supplier(s) or manufacturer(s), an estimate of the average percent composition by weight of the listed substance in the mixture, and the amount of mixture processed during the reporting year.

CBI

☐

<u>Trade Name</u>	<u>Supplier or Manufacturer</u>	<u>Average % Composition by Weight (specify + % precision)</u>	<u>Amount Processed (kg/yr)</u>
<u>NOT APPLICABLE</u>			

☐ Mark (X) this box if you attach a continuation sheet.

PART C RAW MATERIAL VOLUME

3.05 State the quantity of the listed substance used as a raw material during the reporting year in the form of a class I chemical, class II chemical, or polymer, and the percent composition, by weight, of the listed substance.

☐

	Quantity Used (kg/yr)	% Composition by Weight of Listed Sub- stance in Raw Material (specify \pm % precision)
Class I chemical	34,500	99.85 + 0.15
Class II chemical		
Polymer		

☐ Mark (X) this box if you attach a continuation sheet.

SECTION 4 PHYSICAL/CHEMICAL PROPERTIES

General Instructions:

If you are reporting on a mixture as defined in the glossary, reply to questions in Section 4 that are inappropriate to mixtures by stating "NA -- mixture."

For questions 4.06-4.15, if you possess any hazard warning statement, label, MSDS, or other notice that addresses the information requested, you may submit a copy or reasonable facsimile in lieu of answering those questions which it addresses.

PART A PHYSICAL/CHEMICAL DATA SUMMARY

- 4.01 Specify the percent purity for the three major¹ technical grade(s) of the listed substance as it is manufactured, imported, or processed. Measure the purity of the substance in the final product form for manufacturing activities, at the time you import the substance, or at the point you begin to process the substance.

CBI
☐

	<u>Manufacture</u>	<u>Import</u>	<u>Process</u>
Technical grade #1	<u>NA</u> % purity	<u>NA</u> % purity	<u>> 99.7</u> % purity
Technical grade #2	<u>NA</u> % purity	<u>NA</u> % purity	<u>NA</u> % purity
Technical grade #3	<u>NA</u> % purity	<u>NA</u> % purity	<u>NA</u> % purity

¹Major = Greatest quantity of listed substance manufactured, imported or processed.

- 4.02 Submit your most recently updated Material Safety Data Sheet (MSDS) for the listed substance, and for every formulation containing the listed substance. If you possess an MSDS that you developed and an MSDS developed by a different source, submit your version. Indicate whether at least one MSDS has been submitted by circling the appropriate response.

Yes ①

No 2

Indicate whether the MSDS was developed by your company or by a different source.

Your company ①

Another source 2

☒ Mark (X) this box if you attach a continuation sheet.

4.03 Submit a copy or reasonable facsimile of any hazard information (other than an MSDS) that is provided to your customers/users regarding the listed substance or any formulation containing the listed substance. Indicate whether this information has been submitted by circling the appropriate response.

Yes 1
 No ②

4.04 For each activity that uses the listed substance, circle all the applicable number(s) corresponding to each physical state of the listed substance during the activity listed. Physical states for importing and processing activities are determined at the time you import or begin to process the listed substance. Physical states for manufacturing, storage, disposal and transport activities are determined using the final state of the product.

CBI
☐

Activity	Physical State				
	Solid	Slurry	Liquid	Liquified Gas	Gas
Manufacture	1	2	3	4	5
Import	1	2	3	4	5
Process	1	2	③	4	5
Store	1	2	③	4	5
Dispose	1	2	③	4	5
Transport	1	2	③	4	5

☐ Mark (X) this box if you attach a continuation sheet.

4.05 Particle Size -- If the listed substance exists in particulate form during any of the following activities, indicate for each applicable physical state the size and the percentage distribution of the listed substance by activity. Do not include particles ≥ 10 microns in diameter. Measure the physical state and particle sizes for importing and processing activities at the time you import or begin to process the listed substance. Measure the physical state and particle sizes for manufacturing storage, disposal and transport activities using the final state of the product.

CBI

☐

<u>Physical State</u>		<u>Manufacture</u>	<u>Import</u>	<u>Process</u>	<u>Store</u>	<u>Dispose</u>	<u>Transport</u>
Dust	<1 micron		NOT APPLICABLE				
	1 to <5 microns						
	5 to <10 microns						
Powder	<1 micron						
	1 to <5 microns						
	5 to <10 microns						
Fiber	<1 micron						
	1 to <5 microns						
	5 to <10 microns						
Aerosol	<1 micron						
	1 to <5 microns						
	5 to <10 microns						

☐ Mark (X) this box if you attach a continuation sheet.

SECTION 5 ENVIRONMENTAL FATE

PART A RATE CONSTANTS AND TRANSFORMATION PRODUCTS

5.01 Indicate the rate constants for the following transformation processes.

a. Photolysis:

Absorption spectrum coefficient (peak) NA (1/M cm) at NA nm

Reaction quantum yield, ϕ NA at NA nm

Direct photolysis rate constant, k_p , at ... NA 1/hr NA latitude

b. Oxidation constants at 25°C:

For 1O_2 (singlet oxygen), k_{ox} NA 1/M hr

For RO_2 (peroxy radical), k_{ox} NA 1/M hr

c. Five-day biochemical oxygen demand, BOD_5 ... NA mg/l

d. Biotransformation rate constant:

For bacterial transformation in water, k_b ... NA 1/hr

Specify culture NA

e. Hydrolysis rate constants:

For base-promoted process, k_b NA 1/M hr

For acid-promoted process, k_a NA 1/M hr

For neutral process, k_n NA 1/hr

f. Chemical reduction rate (specify conditions) NA

g. Other (such as spontaneous degradation) ... NA

☐ Mark (X) this box if you attach a continuation sheet.

PART B PARTITION COEFFICIENTS

5.02 a. Specify the half-life of the listed substance in the following media.

<u>Media</u>	<u>Half-life (specify units)</u>
Groundwater	NA
Atmosphere	NA
Surface water	NA
Soil	NA

b. Identify the listed substance's known transformation products that have a half-life greater than 24 hours.

<u>CAS No.</u>	<u>Name</u>	<u>Half-life (specify units)</u>	<u>Media</u>
<u>Not Available</u>			in
			in
			in
			in

5.03 Specify the octanol-water partition coefficient, K_{ow} ... NA at 25°C
 Method of calculation or determination NA

5.04 Specify the soil-water partition coefficient, K_d NA at 25°C
 Soil type NA

5.05 Specify the organic carbon-water partition coefficient, K_{oc} NA at 25°C

5.06 Specify the Henry's Law Constant, H NA atm-m³/mole

☐ Mark (X) this box if you attach a continuation sheet.

5.07 List the bioconcentration factor (BCF) of the listed substance, the species for which it was determined, and the type of test used in deriving the BCF.

<u>Bioconcentration Factor</u>	<u>Species</u>	<u>Test</u> ¹
NA		

¹Use the following codes to designate the type of test:

F = Flowthrough
S = Static

☐ Mark (X) this box if you attach a continuation sheet.

6.04 For each market listed below, state the quantity sold and the total sales value of
CBI the listed substance sold or transferred in bulk during the reporting year.

☐

RESPONSE NOT REQUIRED FOR TDI.

<u>Market</u>	<u>Quantity Sold or Transferred (kg/yr)</u>	<u>Total Sales Value (\$/yr)</u>
Retail sales	_____	_____
Distribution -- Wholesalers	_____	_____
Distribution -- Retailers	_____	_____
Intra-company transfer	_____	_____
Repackagers	_____	_____
Mixture producers	_____	_____
Article producers	_____	_____
Other chemical manufacturers or processors	_____	_____
Exporters	_____	_____
Other (specify)	_____	_____
_____	_____	_____

6.05 Substitutes -- List all known commercially feasible substitutes that you know exist
CBI for the listed substance and state the cost of each substitute. A commercially
feasible substitute is one which is economically and technologically feasible to use
in your current operation, and which results in a final product with comparable
performance in its end uses.

☐

<u>Substitute</u>	<u>Cost (\$/kg)</u>
Isonate 143L (Modified Diphenylmethane Diisocyanate)*	2.66
* Substituted during reporting year.	_____
_____	_____
_____	_____

☐ Mark (X) this box if you attach a continuation sheet.

SECTION 7 MANUFACTURING AND PROCESSING INFORMATION

General Instructions:

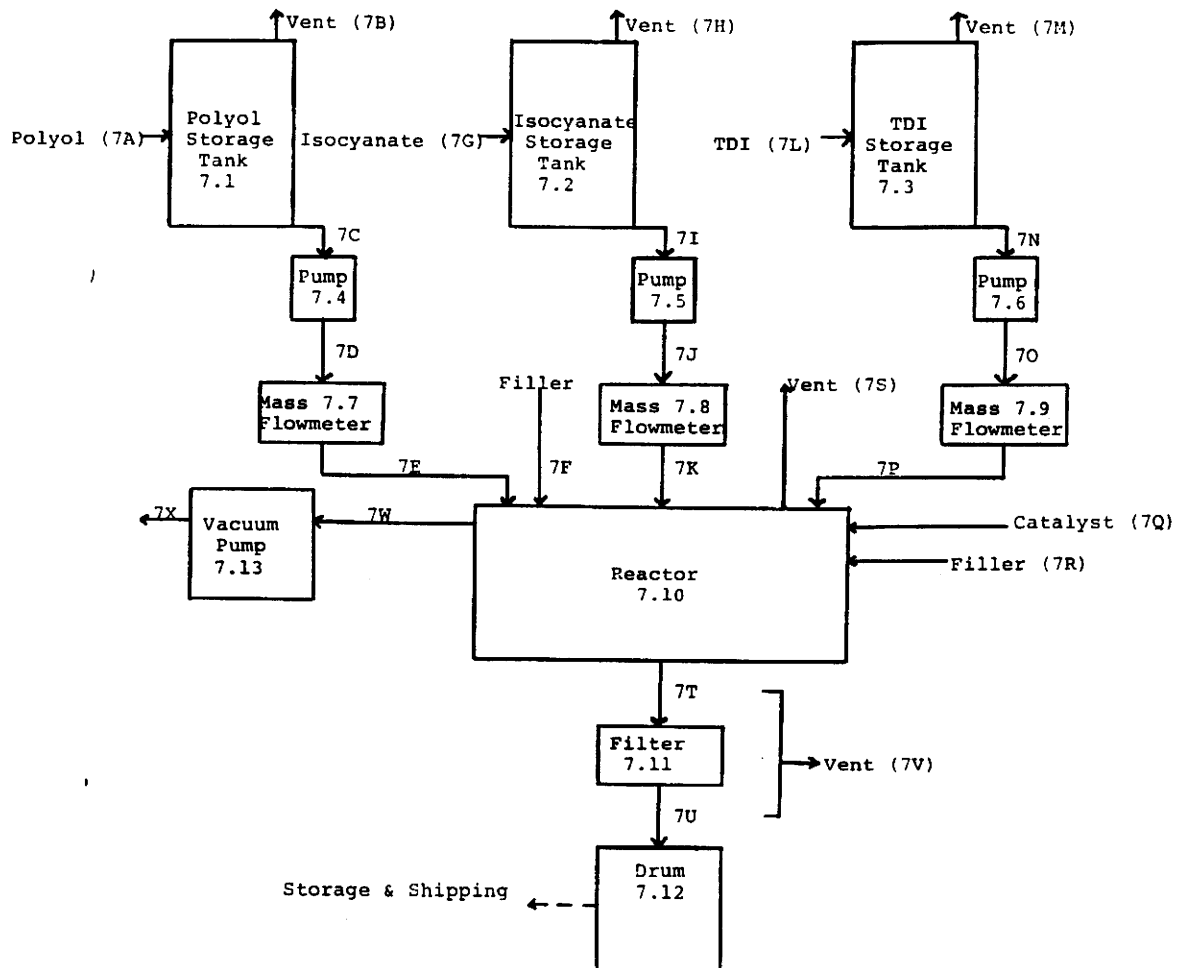
For questions 7.04-7.06, provide a separate response for each process block flow diagram provided in questions 7.01, 7.02, and 7.03. Identify the process type from which the information is extracted.

PART A MANUFACTURING AND PROCESSING PROCESS TYPE DESCRIPTION

7.01 In accordance with the instructions, provide a process block flow diagram showing the major (greatest volume) process type involving the listed substance.

CBI

☐ Process type Production of Pliogrip 6000 Prepolymer

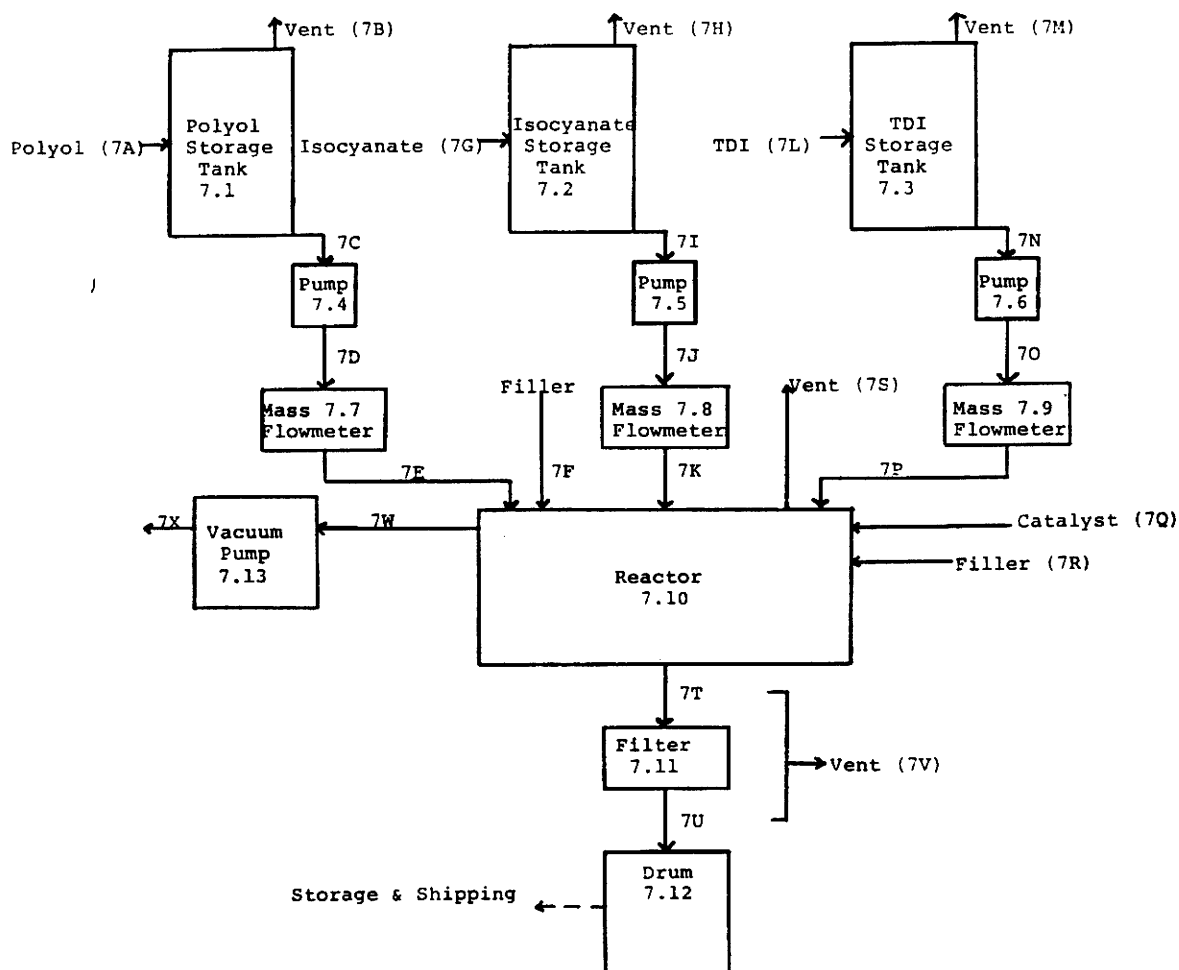


☐ Mark (X) this box if you attach a continuation sheet.

7.03 In accordance with the instructions, provide a process block flow diagram showing all process emission streams and emission points that contain the listed substance and which, if combined, would total at least 90 percent of all facility emissions if not treated before emission into the environment. If all such emissions are released from one process type, provide a process block flow diagram using the instructions for question 7.01. If all such emissions are released from more than one process type, provide a process block flow diagram showing each process type as a separate block.

CBI

☐ Process type Production of Pliogrip 6000 Prepolymer



☐ Mark (X) this box if you attach a continuation sheet.

7.04 Describe the typical equipment types for each unit operation identified in your process block flow diagram(s). If a process block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type.

CBI

☐ Process type Production of Pliogrip 6000 Prepolymer

<u>Unit Operation ID Number</u>	<u>Typical Equipment Type</u>	<u>Operating Temperature Range (°C)</u>	<u>Operating Pressure Range (mm Hg)</u>	<u>Vessel Composition</u>
<u>7.1</u>	<u>Storage Tank</u>	<u>25 - 50</u>	<u>Atmospheric</u>	<u>Carbon Steel</u>
<u>7.2</u>	<u>Storage Tank</u>	<u>20 - 30</u>	<u>Atmospheric</u>	<u>Carbon Steel</u>
<u>7.3</u>	<u>Storage Tank</u>	<u>20 - 30</u>	<u>Atmospheric</u>	<u>Carbon Steel</u>
<u>7.4</u>	<u>Pump</u>	<u>25 - 50</u>	<u>3000 - 5000</u>	<u>Carbon Steel</u>
<u>7.5</u>	<u>Pump</u>	<u>20 - 30</u>	<u>3000 - 5000</u>	<u>Carbon Steel</u>
<u>7.6</u>	<u>Pump</u>	<u>20 - 30</u>	<u>3000 - 5000</u>	<u>Carbon Steel</u>
<u>7.7</u>	<u>Mass Flowmeter</u>	<u>25 - 50</u>	<u>2000 - 4000</u>	<u>Stainless Steel</u>
<u>7.8</u>	<u>Mass Flowmeter</u>	<u>20 - 30</u>	<u>2000 - 4000</u>	<u>Stainless Steel</u>
<u>7.9</u>	<u>Mass Flowmeter</u>	<u>20 - 30</u>	<u>2000 - 4000</u>	<u>Stainless Steel</u>
<u>7.10</u>	<u>Ross Reactor</u>	<u>Ambient - 100</u>	<u>23 - 760</u>	<u>Stainless Steel</u>
<u>7.11</u>	<u>Bag Filter</u>	<u>Ambient - 70</u>	<u>Atmospheric</u>	<u>Nylon</u>
<u>7.12</u>	<u>Closed Head Drum</u>	<u>Ambient - 70</u>	<u>Atmospheric</u>	<u>Carbon Steel</u>

☐ Mark (X) this box if you attach a continuation sheet.

7.05 Describe each process stream identified in your process block flow diagram(s). If a process block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type.

CBI

☐ Process type Production of Pliogrip 6000 Prepolymer

<u>Process Stream ID Code</u>	<u>Process Stream Description</u>	<u>Physical State¹</u>	<u>Stream Flow (kg/yr)</u>
<u>7A, 7C, 7D, 7E</u>	<u>Polyol</u>	<u>OL</u>	<u>96,400</u>
<u>7G, 7I, 7J, 7K</u>	<u>Isocyanate</u>	<u>OL</u>	<u>29,100</u>
<u>7L, 7N, 7O, 7P</u>	<u>TDI</u>	<u>OL</u>	<u>31,700</u>
<u>7F, 7R</u>	<u>Filler</u>	<u>SO</u>	<u>61,400</u>
<u>7Q</u>	<u>Catalyst</u>	<u>SO</u>	<u>150</u>
<u>7T, 7U</u>	<u>Pliogrip 6000</u>	<u>OL</u>	<u>218,750</u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>

¹Use the following codes to designate the physical state for each process stream:

GC = Gas (condensable at ambient temperature and pressure)
 GU = Gas (uncondensable at ambient temperature and pressure)
 SO = Solid
 SY = Sludge or slurry
 AL = Aqueous liquid
 OL = Organic liquid
 IL = Immiscible liquid (specify phases, e.g., 90% water, 10% toluene)

☐ Mark (X) this box if you attach a continuation sheet.

7.06 Characterize each process stream identified in your process block flow diagram(s). If a process block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type. (Refer to the CBI instructions for further explanation and an example.)

☐ Process type Production of Pliogrip 6000 Prepolymer

a.	b.	c.	d.	e.
Process Stream ID Code	Known Compounds ¹	Concentrations ^{2,3} (% or ppm)	Other Expected Compounds	Estimated Concentrations (% or ppm)
7A, 7C, 7D, 7E	Polypropylene Glycol	100% (E) (W)	NA	NA
7G, 7I, 7J, 7K	MDI	50% (A) (W)	Phenyl Isocyanate	Trace
	Oligomers of MDI	50% (A) (W)		
7L, 7N, 7O, 7P	TDI	99.7% (A) (W)	UK	
7F, 7R	Talc	98% (A) (W)	Dolomite	2% (A) (W)
7Q	Zinc Stearate	100% (E) (W)		
7T, 7U	TDI	14.5% (E) (W)	NA	NA
	Filler	28.1% (E) (W)		
	Polymer	57.3% (E) (W)		
	Catalyst	0.1% (E) (W)		

7.06 continued below

☐ Mark (X) this box if you attach a continuation sheet.

SECTION 8 RESIDUAL TREATMENT GENERATION, CHARACTERIZATION, TRANSPORTATION, AND
MANAGEMENT

General Instructions:

For questions 8.04-8.06, provide a separate response for each residual treatment block flow diagram provided in question 8.01, 8.02 or 8.03. Identify the process type from which the information is extracted.

For questions 8.05-8.33, the Stream Identification Codes are those process streams listed in either the Section 7 or Section 8 block flow diagrams which contain residuals for each applicable waste management method.

For questions 8.07-8.33, if residuals are combined before they are handled, list those Stream Identification Codes on the same line.

Questions 8.09-8.33 refer to the waste management activities involving the residuals identified in either the Section 7 or Section 8 block flow diagrams. Not all Stream Identification Codes used in the sample answers (e.g., for the incinerator questions) have corresponding process streams identified in the block flow diagram(s). These Stream Identification codes are for illustrative purposes only.

For questions 8.11-8.33, if you have provided the information requested on one of the EPA Office of Solid Waste surveys listed below within the three years prior to your reporting year, you may submit a copy or reasonable facsimile in lieu of answering those questions which the survey addresses. The applicable surveys are: (1) Hazardous Waste Treatment, Storage, Disposal, and Recycling Survey; (2) Hazardous Waste Generator Survey; or (3) Subtitle D Industrial Facility Mail Survey.

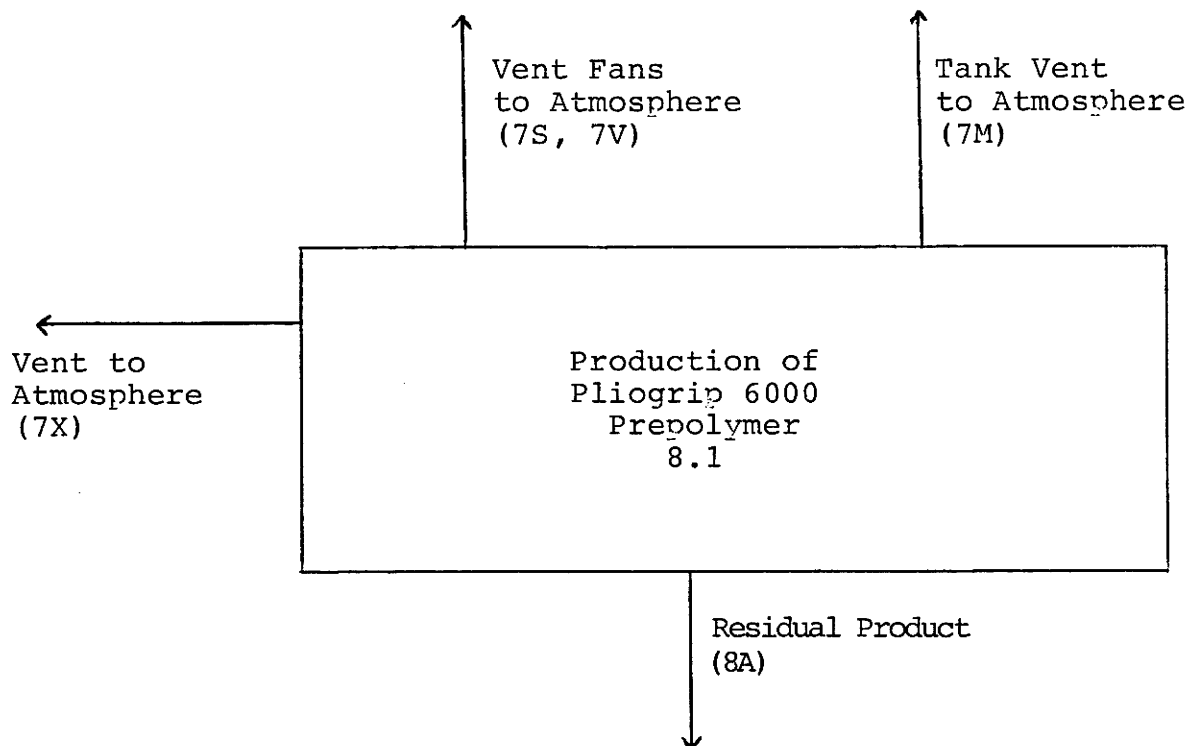
☐ Mark (X) this box if you attach a continuation sheet.

PART A RESIDUAL TREATMENT PROCESS DESCRIPTION

8.01 In accordance with the instructions, provide a residual treatment block flow diagram which describes the treatment process used for residuals identified in question 7.01.

CBI

☐ Process type Production of Pliogrip 6000 Prepolymer



☐ Mark (X) this box if you attach a continuation sheet.

PART B RESIDUAL GENERATION AND CHARACTERIZATION

8.05 Characterize each process stream identified in your residual treatment block flow diagram(s). If a residual treatment block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type. (Refer to the instructions for further explanation and an example.)

CBI

☐ Process type Production of Plioqrip 6000 Prepolymer

a.	b.	c.	d.	e.	f.	g.
Stream ID Code	Type of Hazardous Waste ¹	Physical State of Residual ²	Known Compounds ³	Concentrations (% or ppm) ^{4,5,6}	Other Expected Compounds	Estimated Concentrations (% or ppm)
<u>7M</u>	<u>UK</u>	<u>GU</u>	<u>TDI</u>	<u>UK</u>	<u>UK</u>	<u>NA</u>
<u>7S, 7V</u>	<u>UK</u>	<u>GU</u>	<u>TDI</u>	<u>UK</u>	<u>UK</u>	<u>NA</u>
		<u>GU</u>	<u>Argon</u>	<u>UK</u>		
<u>7X</u>	<u>UK</u>	<u>GU</u>	<u>TDI</u>	<u>UK</u>	<u>UK</u>	<u>NA</u>
		<u>GU</u>	<u>Argon</u>	<u>UK</u>		
<u>8A</u>	<u>UK</u>	<u>OL</u>	<u>TDI</u>	<u>14.5% (E) (W)</u>	<u>NA</u>	<u>NA</u>
			<u>Filler</u>	<u>28.1% (E) (W)</u>		
			<u>Polymer</u>	<u>57.3% (E) (W)</u>		
			<u>Catalyst</u>	<u>0.1% (E) (W)</u>		

8.05 continued below

☐ Mark (X) this box if you attach a continuation sheet.

8.05 (continued)

¹Use the following codes to designate the type of hazardous waste:

I = Ignitable
C = Corrosive
R = Reactive
E = EP toxic
T = Toxic
H = Acutely hazardous

²Use the following codes to designate the physical state of the residual:

GC = Gas (condensable at ambient temperature and pressure)
GU = Gas (uncondensable at ambient temperature and pressure)
SO = Solid
SY = Sludge or slurry
AL = Aqueous liquid
OL = Organic liquid
IL = Immiscible liquid (specify phases, e.g., 90% water, 10% toluene)

8.05 continued below

☐ Mark (X) this box if you attach a continuation sheet.

8.06 Characterize each process stream identified in your residual treatment block flow diagram(s). If a residual treatment block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type. (Refer to the instructions for further explanation and an example.)

CBI

☐ Process type Production of Pliogrip 6000 Prepolymer

a.	b.	c.	d.	e.		f.	g.
Stream ID Code	Waste Description Code ¹	Management Method Code ²	Residual Quantities (kg/yr)	Management of Residual (%)		Costs for Off-Site Management (per kg)	Changes in Management Methods
				On-Site	Off-Site		
7M	B91	M5(a)	7	100	NA	NA	1TR*
7S, 7V	B91	M5(a)	16	100	NA	NA	1TR*
7X	B91	M5(a)	<1	100	NA	NA	1TR*
8A	B69	M6(Landfill)	UK	NA	100	UK	1TR*

*Use of Listed Substance was discontinued during fiscal 1988.

¹Use the codes provided in Exhibit 8-1 to designate the waste descriptions

²Use the codes provided in Exhibit 8-2 to designate the management methods

☐ Mark (X) this box if you attach a continuation sheet.

BEST COPY AVAILABLE

EXHIBIT 8-1.
(Refers to question 8.06(b))

WASTE DESCRIPTION CODES

These waste description codes were developed specifically for this survey to supplement the descriptions listed with the RCRA and other waste codes. (These waste description codes are not regulatory definitions.)

WASTE DESCRIPTION CODES FOR HAZARDOUS WASTE DESCRIBED BY A SINGLE RCRA F, K, P, OR U WASTE CODE

A01 Spent solvent (F001-F005, K086)	A06 Contaminated soil or cleanup residue	A10 Incinerator ash
A02 Other organic liquid (F001-F005, K086)	A07 Other F or K waste, exactly as described	A11 Solidified treatment residue
A03 Still bottom (F001-F005, K086)	A08 Concentrated off-spec or discarded product	A12 Other treatment residue (specify in "Facility Notes")
A04 Other organic sludge (F001-F005, K086)	A09 Empty containers	A13 Other untreated waste (specify in "Facility Notes")
A05 Wastewater or aqueous mixture		

"Exactly as described" means that the waste matches the description of the RCRA waste code.

INORGANIC LIQUIDS—Waste that is primarily inorganic and highly fluid (e.g., aqueous), with low suspended inorganic solids and low organic content.

- B01 Aqueous waste with low solvents
- B02 Aqueous waste with low other toxic organics
- B03 Spent acid with metals
- B04 Spent acid without metals
- B05 Acidic aqueous waste
- B06 Caustic solution with metals but no cyanides
- B07 Caustic solution with metals and cyanides
- B08 Caustic solution with cyanides but no metals
- B09 Spent caustic
- B10 Caustic aqueous waste
- B11 Aqueous waste with reactive sulfides
- B12 Aqueous waste with other reactives (e.g., explosives)
- B13 Other aqueous waste with high dissolved solids
- B14 Other aqueous waste with low dissolved solids
- B15 Scrubber water
- B16 Leachate
- B17 Waste liquid mercury
- B18 Other inorganic liquid (specify in "Facility Notes")

INORGANIC SLUDGES—Waste that is primarily inorganic, with moderate-to-high water content and low organic content; pumpable.

- B19 Lime sludge without metals
- B20 Lime sludge with metals/metal hydroxide sludge
- B21 Wastewater treatment sludge with toxic organics
- B22 Other wastewater treatment sludge
- B23 Untreated plating sludge without cyanides
- B24 Untreated plating sludge with cyanides
- B25 Other sludge with cyanides
- B26 Sludge with reactive sulfides
- B27 Sludge with other reactives
- B28 Degreasing sludge with metal scale or filings
- B29 Air pollution control device sludge (e.g., fly ash, wet scrubber sludge)
- B30 Sediment or lagoon dragout contaminated with organics
- B31 Sediment or lagoon dragout contaminated with inorganics only

- B32 Drilling mud
- B33 Asbestos slurry or sludge
- B34 Chloride or other brine sludge
- B35 Other inorganic sludge (specify in "Facility Notes")

INORGANIC SOLIDS—Waste that is primarily inorganic and solid, with low organic content and low-to-moderate water content; not pumpable.

- B36 Soil contaminated with organics
- B37 Soil contaminated with inorganics only
- B38 Ash, slag, or other residue from incineration of wastes
- B39 Other "dry" ash, slag, or thermal residue
- B40 "Dry" lime or metal hydroxide solids chemically "fixed"
- B41 "Dry" lime or metal hydroxide solids not "fixed"
- B42 Metal scale, filings, or scrap
- B43 Empty or crushed metal drums or containers
- B44 Batteries or battery parts, casings, cores
- B45 Spent solid filters or adsorbents
- B46 Asbestos solids and debris
- B47 Metal-cyanide salts/chemicals
- B48 Reactive cyanide salts/chemicals
- B49 Reactive sulfide salts/chemicals
- B50 Other reactive salts/chemicals
- B51 Other metal salts/chemicals
- B52 Other waste inorganic chemicals
- B53 Lab packs of old chemicals only
- B54 Lab packs of debris only
- B55 Mixed lab packs
- B56 Other inorganic solids (specify in "Facility Notes")

INORGANIC GASES—Waste that is primarily inorganic with a low organic content and is a gas at atmospheric pressure.

ORGANIC LIQUIDS—Waste that is primarily organic and is highly fluid, with low inorganic solids content and low-to-moderate water content.

- B58 Concentrated solvent-water solution
- B59 Halogenated (e.g., chlorinated) solvent
- B60 Nonhalogenated solvent

- B61 Halogenated/nonhalogenated solvent mixture
- B62 Oil-water emulsion or mixture
- B63 Waste oil
- B64 Concentrated aqueous solution of other organics
- B65 Concentrated phenolics
- B66 Organic paint, ink, lacquer, or varnish
- B67 Adhesives or epoxies
- B68 Paint thinner or petroleum distillates
- B69 Reactive or polymerizable organic liquid
- B70 Other organic liquid (specify in "Facility Notes")

ORGANIC SLUDGES—Waste that is primarily organic, with low-to-moderate inorganic solids content and water content; pumpable.

- B71 Still bottoms of halogenated (e.g., chlorinated) solvents or other organic liquids
- B72 Still bottoms of nonhalogenated solvents or other organic liquids
- B73 Oily sludge
- B74 Organic paint or ink sludge
- B75 Reactive or polymerizable organics
- B76 Resins, tars, or tarry sludge
- B77 Biological treatment sludge
- B78 Sewage or other untreated biological sludge
- B79 Other organic sludge (specify in "Facility Notes")

ORGANIC SOLIDS—Waste that is primarily organic and solid, with low-to-moderate inorganic content and water content; not pumpable.

- B80 Halogenated pesticide solid
- B81 Nonhalogenated pesticide solid
- B82 Solid resins or polymerized organics
- B83 Spent carbon
- B84 Reactive organic solid
- B85 Empty fiber or plastic containers
- B86 Lab packs of old chemicals only
- B87 Lab packs of debris only
- B88 Mixed lab packs
- B89 Other halogenated organic solid
- B90 Other nonhalogenated organic solid

ORGANIC GASES—Waste that is primarily organic with low-to-moderate inorganic content and is a gas at atmospheric pressure.

- B91 Organic gases

EXHIBIT 8-2.
(Refers to question 8.06(c))

MANAGEMENT METHODS

- M1 = Discharge to publicly owned wastewater treatment works
M2 = Discharge to surface water under NPDES
M3 = Discharge to off-site, privately owned wastewater treatment works
M4 = Scrubber: a) caustic; b) water; c) other
M5 = Vent to: a) atmosphere; b) flare; c) other (specify) _____
M6 = Other (specify) _____

TREATMENT AND RECYCLING

Incineration/thermal treatment

- 1I Liquid injection
2I Rotary or rocking kiln
3I Rotary kiln with a liquid injection unit
4I Two stage
5I Fixed hearth
6I Multiple hearth
7I Fluidized bed
8I Infrared
9I Fume/vapor
10I Pyrolytic destructor
11I Other incineration/thermal treatment

Reuse as fuel

- 1RF Cement kiln
2RF Aggregate kiln
3RF Asphalt kiln
4RF Other kiln
5RF Blast furnace
6RF Sulfur recovery furnace
7RF Smelting, melting, or refining furnace
8RF Coke oven
9RF Other industrial furnace
10RF Industrial boiler
11RF Utility boiler
12RF Process heater
13RF Other reuse as fuel unit

Fuel Blending

- 1PB Fuel blending

Solidification

- 1S Cement or cement/silicate processes
2S Pozzolanic processes
3S Asphaltic processes
4S Thermoplastic techniques
5S Organic polymer techniques
6S Jacketing (macro-encapsulation)
7S Other solidification

Recovery of solvents and liquid organics for reuse

- 1SR Fractionation
2SR Batch still distillation
3SR Solvent extraction
4SR Thin-film evaporation
5SR Filtration
6SR Phase separation
7SR Dessication
8SR Other solvent recovery

Recovery of metals

- 1MR Activated carbon (for metals recovery)
2MR Electrodialysis (for metals recovery)
3MR Electrolytic metal recovery
4MR Ion exchange (for metals recovery)
5MR Reverse osmosis (for metals recovery)
6MR Solvent extraction (for metals recovery)
7MR Ultrafiltration (for metals recovery)
8MR Other metals recovery

Wastewater Treatment

After each wastewater treatment type listed below (1WT - 66WT) specify a) tank; or b) surface impoundment (i.e., 63WTa)

Equalization

- 1WT Equalization

Cyanide oxidation

- 2WT Alkaline chlorination
3WT Ozone
4WT Electrochemical
5WT Other cyanide oxidation

General oxidation (including disinfection)

- 6WT Chlorination
7WT Ozonation
8WT UV radiation
9WT Other general oxidation

Chemical precipitation¹

- 10WT Lime
11WT Sodium hydroxide
12WT Soda ash
13WT Sulfide
14WT Other chemical precipitation

Chromium reduction

- 15WT Sodium bisulfite
16WT Sulfur dioxide

EXHIBIT 8-2. (continued)

MANAGEMENT METHODS

17WT Ferrous sulfate
18WT Other chromium reduction

Complexed metals treatment (other than
chemical precipitation by pH adjustment)
19WT Complexed metals treatment

Emulsion breaking
20WT Thermal
21WT Chemical
22WT Other emulsion breaking

Adsorption
23WT Carbon adsorption
24WT Ion exchange
25WT Resin adsorption
26WT Other adsorption

Stripping
27WT Air stripping
28WT Steam stripping
29WT Other stripping

Evaporation
30WT Thermal
31WT Solar
32WT Vapor recompression
33WT Other evaporation

Filtration
34WT Diatomaceous earth
35WT Sand
36WT Multimedia
37WT Other filtration

Sludge dewatering
38WT Gravity thickening
39WT Vacuum filtration
40WT Pressure filtration (belt, plate
and frame, or leaf)
41WT Centrifuge
42WT Other sludge dewatering

Air flotation
43WT Dissolved air flotation
44WT Partial aeration
45WT Air dispersion
46WT Other air flotation

Oil skimming
47WT Gravity separation

48WT Coalescing plate separation
49WT Other oil skimming

Other liquid phase separation
50WT Decanting
51WT Other liquid phase separation

Biological treatment
52WT Activated sludge
53WT Fixed film-trickling filter
54WT Fixed film-rotating contactor
55WT Lagoon or basin, aerated
56WT Lagoon, facultative
57WT Anaerobic
58WT Other biological treatment

Other wastewater treatment
59WT Wet air oxidation
60WT Neutralization
61WT Nitrification
62WT Denitrification
63WT Flocculation and/or coagulation
64WT Settling (clarification)
65WT Reverse osmosis
66WT Other wastewater treatment

OTHER WASTE TREATMENT

1TR Other treatment
2TR Other recovery for reuse

ACCUMULATION

1A Containers
2A Tanks

STORAGE

1ST Container (i.e., barrel, drum)
2ST Tank
3ST Waste pile
4ST Surface impoundment
5ST Other storage

DISPOSAL

1D Landfill
2D Land treatment
3D Surface impoundment (to be closed
as a landfill)
4D Underground injection well

¹Chemical precipitation is a treatment operation whereby the pH of a waste is adjusted to the range necessary for removal (precipitation) of contaminants. However, if the pH is adjusted solely to achieve a neutral pH, THE OPERATION SHOULD BE CONSIDERED NEUTRALIZATION (60WT).

8.22 Describe the combustion chamber design parameters for each of the three largest (by capacity) incinerators that are used on-site to burn the residuals identified in your process block or residual treatment block flow diagram(s).

☐ RESPONSE NOT REQUIRED FOR TDI.

Incinerator	Combustion Chamber Temperature (°C)		Location of Temperature Monitor		Residence Time In Combustion Chamber (seconds)	
	Primary	Secondary	Primary	Secondary	Primary	Secondary
1						
2						
3						

Indicate if Office of Solid Waste survey has been submitted in lieu of response by circling the appropriate response.

Yes 1

No 2

8.23 Complete the following table for the three largest (by capacity) incinerators that are used on-site to burn the residuals identified in your process block or residual treatment block flow diagram(s).

☐

Incinerator	Air Pollution Control Device ¹	Types of Emissions Data Available
1	NA	NA
2	NA	NA
3	NA	NA

Indicate if Office of Solid Waste survey has been submitted in lieu of response by circling the appropriate response.

Yes 1

No ②

¹Use the following codes to designate the air pollution control device:

S = Scrubber (include type of scrubber in parenthesis)

E = Electrostatic precipitator

O = Other (specify) _____

☐ Mark (X) this box if you attach a continuation sheet.

SECTION 9 WORKER EXPOSURE

General Instructions:

Questions 9.03-9.25 apply only to those processes and workers involved in manufacturing or processing the listed substance. Do not include workers involved in residual waste treatment unless they are involved in this treatment process on a regular basis (i.e., exclude maintenance workers, construction workers, etc.).

☐ Mark (X) this box if you attach a continuation sheet.

PART A EMPLOYMENT AND POTENTIAL EXPOSURE PROFILE

9.01 Mark (X) the appropriate column to indicate whether your company maintains records on the following data elements for hourly and salaried workers. Specify for each data element the year in which you began maintaining records and the number of years the records for that data element are maintained. (Refer to the instructions for further explanation and an example.)

CBI

☐

Data Element	Data are Maintained for:		Year in Which Data Collection Began	Number of Years Records Are Maintained
	Hourly Workers	Salaried Workers		
Date of hire	<u>X</u>	<u>X</u>	<u>1974</u>	<u>6 years after termination</u>
Age at hire	<u>X</u>	<u>X</u>	<u>1984*</u>	<u>6 years after termination</u>
Work history of individual before employment at your facility	<u>X</u>	<u>X</u>	<u>1984*</u>	<u>6 years after termination</u>
Sex	<u>X</u>	<u>X</u>	<u>1984*</u>	<u>6 years after termination</u>
Race	<u>X</u>	<u>X</u>	<u>1984*</u>	<u>6 years after termination</u>
Job titles	<u>X</u>	<u>X</u>	<u>1984*</u>	<u>6 years after termination</u>
Start date for each job title	<u>X</u>	<u>X</u>	<u>1984*</u>	<u>6 years after termination</u>
End date for each job title	<u>X</u>	<u>X</u>	<u>1984*</u>	<u>6 years after termination</u>
Work area industrial hygiene monitoring data	<u>X</u>	<u>X</u>	<u>1980</u>	<u>indefinite</u>
Personal employee monitoring data	<u>X</u>	<u>X</u>	<u>1980</u>	<u>indefinite</u>
Employee medical history	<u>X</u>	<u>X</u>	<u>1984*</u>	<u>indefinite</u>
Employee smoking history	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>
Accident history	<u>X</u>	<u>X</u>	<u>1984*</u>	<u>5 years</u>
Retirement date	<u>X</u>	<u>X</u>	<u>1969</u>	<u>6 years after termination</u>
Termination date	<u>X</u>	<u>X</u>	<u>1984*</u>	<u>6 years after termination</u>
Vital status of retirees	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>
Cause of death data	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>

* Data Prior to 1984 may be available from Goodyear Tire & Rubber Company (former owner)

☐ Mark (X) this box if you attach a continuation sheet.

9.02 In accordance with the instructions, complete the following table for each activity in which you engage.

CBI

☐

a.	b.	c.	d.	e.
<u>Activity</u>	<u>Process Category</u>	<u>Yearly Quantity (kg)</u>	<u>Total Workers</u>	<u>Total Worker-Hours</u>
Manufacture of the listed substance	Enclosed	- 0 -	- 0 -	- 0 -
	Controlled Release	- 0 -	- 0 -	- 0 -
	Open	- 0 -	- 0 -	- 0 -
On-site use as reactant	Enclosed	- 0 -	- 0 -	- 0 -
	Controlled Release	- 0 -	- 0 -	- 0 -
	Open	- 0 -	- 0 -	- 0 -
On-site use as nonreactant	Enclosed	- 0 -	- 0 -	- 0 -
	Controlled Release	31,700	20	625
	Open	- 0 -	- 0 -	- 0 -
On-site preparation of products	Enclosed	- 0 -	- 0 -	- 0 -
	Controlled Release	- 0 -	- 0 -	- 0 -
	Open	- 0 -	- 0 -	- 0 -

☒ Mark (X) this box if you attach a continuation sheet.

9.03 Provide a descriptive job title for each labor category at your facility that encompasses workers who may potentially come in contact with or be exposed to the listed substance.

CBI

☐

Labor Category

Descriptive Job Title

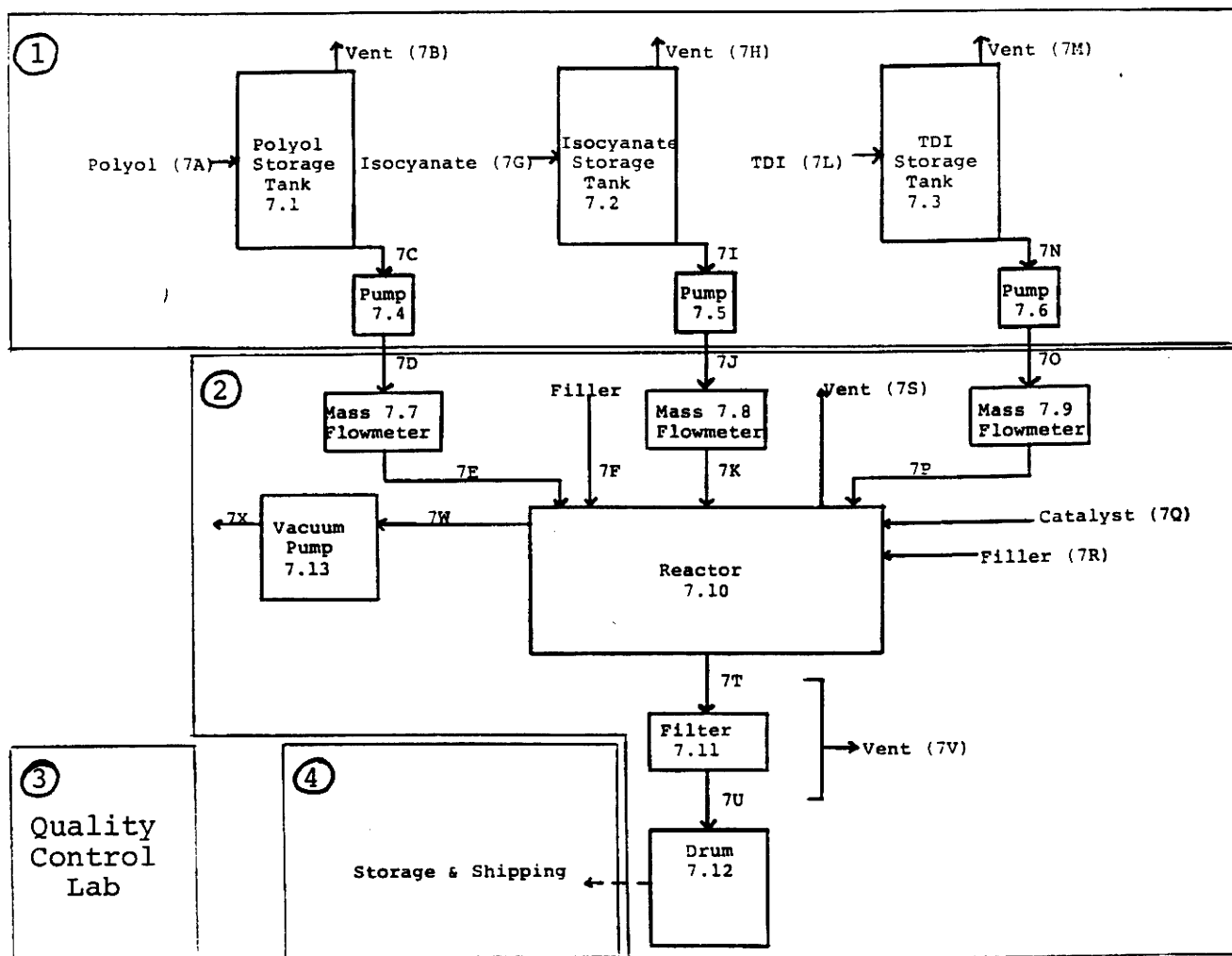
A	<u>Shipping/Receiving Personnel</u>
B	<u>General Operator</u>
C	<u>Shift Supervisor</u>
D	<u>QC Personnel</u>
E	<u></u>
F	<u></u>
G	<u></u>
H	<u></u>
I	<u></u>
J	<u></u>

☐ Mark (X) this box if you attach a continuation sheet.

9.04 In accordance with the instructions, provide your process block flow diagram(s) and indicate associated work areas.

CBI

☐ Process type Production of Pliogrip 6000 Prepolymer



☐ Mark (X) this box if you attach a continuation sheet.

9.05 Describe the various work area(s) shown in question 9.04 that encompass workers who may potentially come in contact with or be exposed to the listed substance. Add any additional areas not shown in the process block flow diagram in question 7.01 or 7.02. Photocopy this question and complete it separately for each process type.

CBI

☐ Process type Production of Pliogrip 6000 Prepolymer

Work Area ID

Description of Work Areas and Worker Activities

1	<u>Storage Tanks (Workers Monitor Tanks and Unload Truck</u>
2	<u>Processing Area (Workers Charge Raw Materials to</u>
3	<u>Reactor, Sample Material, and Drum Off Finished Product</u>
4	<u>Quality Control Lab (Workers Test Raw Materials and</u>
5	<u>Finished Products)</u>
6	<u>Storage and Shipping Area (Workers Move Drums of</u>
7	<u>Finished Product)</u>
8	<u></u>
9	<u></u>
10	<u></u>

☐ Mark (X) this box if you attach a continuation sheet.

9.06 Complete the following table for each work area identified in question 9.05, and for each labor category at your facility that encompasses workers who may potentially come in contact with or be exposed to the listed substance. Photocopy this question and complete it separately for each process type and work area.

CBI

[] Process type Production of Pliogrip 6000 Prepolymer

Work area 1 (Storage Tanks)

Labor Category	Number of Workers Exposed	Mode of Exposure (e.g., direct skin contact)	Physical State of Listed Substance ¹	Average Length of Exposure Per Day ²	Number of Days per Year Exposed
<u>A</u>	<u>1</u>	<u>Direct Skin Contact</u>	<u>OL</u>	<u>D</u>	<u>5</u>
<u>A</u>	<u>1</u>	<u>Inhalation</u>	<u>GU</u>	<u>D</u>	<u>5</u>

¹Use the following codes to designate the physical state of the listed substance at the point of exposure:

GC = Gas (condensable at ambient temperature and pressure)
 GU = Gas (uncondensable at ambient temperature and pressure; includes fumes, vapors, etc.)
 SO = Solid

SY = Sludge or slurry
 AL = Aqueous liquid
 OL = Organic liquid
 IL = Immiscible liquid (specify phases, e.g., 90% water, 10% toluene)

²Use the following codes to designate average length of exposure per day:

A = 15 minutes or less
 B = Greater than 15 minutes, but not exceeding 1 hour
 C = Greater than one hour, but not exceeding 2 hours

D = Greater than 2 hours, but not exceeding 4 hours
 E = Greater than 4 hours, but not exceeding 8 hours
 F = Greater than 8 hours

[X] Mark (X) this box if you attach a continuation sheet.

9.07 For each labor category represented in question 9.06, indicate the 8-hour Time Weighted Average (TWA) exposure levels and the 15-minute peak exposure levels. Photocopy this question and complete it separately for each process type and work area.

CBI

☐ Process type Production of Pliogrip 6000 Prepolymer

Work area 1, 2, 3, 4

<u>Labor Category</u>	<u>8-hour TWA Exposure Level (ppm, mg/m³, other-specify)</u>	<u>15-Minute Peak Exposure Level (ppm, mg/m³, other-specify)</u>
-----------------------	---	---

NO Industrial Hygiene Monitoring During Fiscal 1988

_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

☐ Mark (X) this box if you attach a continuation sheet.

PART B WORK PLACE MONITORING PROGRAM

9.08 If you monitor worker exposure to the listed substance, complete the following table.

CBI

☐

<u>Sample/Test</u>	<u>Work Area ID</u>	<u>Testing Frequency (per year)</u>	<u>Number of Samples (per test)</u>	<u>Who Samples¹</u>	<u>Analyzed In-House (Y/N)</u>	<u>Number of Years Records Maintained</u>
Personal breathing zone	No	Industrial	Hygiene	Monitoring	During	Fiscal 1988
General work area (air)						
Wipe samples						
Adhesive patches						
Blood samples						
Urine samples						
Respiratory samples						
Allergy tests						
Other (specify)						
Other (specify)						
Other (specify)						

¹Use the following codes to designate who takes the monitoring samples:

A = Plant industrial hygienist

B = Insurance carrier

C = OSHA consultant

D = Other (specify) _____

☐ Mark (X) this box if you attach a continuation sheet.

9.09 For each sample type identified in question 9.08, describe the type of sampling and analytical methodology used for each type of sample.

<input type="checkbox"/> Sample Type	Sampling and Analytical Methodology
<u>Not Applicable - No Industrial Hygiene Monitoring During Fiscal 1988</u>	

9.10 If you conduct personal and/or ambient air monitoring for the listed substance, specify the following information for each equipment type used.

CBI

<input type="checkbox"/> Equipment Type ¹	Detection Limit ²	Manufacturer	Averaging Time (hr)	Model Number
<u>Not Applicable - No Industrial Hygiene Monitoring During Fiscal 1988</u>				

¹Use the following codes to designate personal air monitoring equipment types:

- A = Passive dosimeter
- B = Detector tube
- C = Charcoal filtration tube with pump
- D = Other (specify) _____

Use the following codes to designate ambient air monitoring equipment types:

- E = Stationary monitors located within work area
- F = Stationary monitors located within facility
- G = Stationary monitors located at plant boundary
- H = Mobile monitoring equipment (specify) _____
- I = Other (specify) _____

²Use the following codes to designate detection limit units:

- A = ppm
- B = Fibers/cubic centimeter (f/cc)
- C = Micrograms/cubic meter (μm^3)

☐ Mark (X) this box if you attach a continuation sheet.

9.11 If you conduct routine medical tests for monitoring the health effects of exposure to the listed substance, specify the type and frequency of the tests.

CBI

☐

Test Description

Frequency
(weekly, monthly, yearly, etc.)

Pulmonary Function Test

Every 2 (two) Years

☐ Mark (X) this box if you attach a continuation sheet.

PART C ENGINEERING CONTROLS

9.12 Describe the engineering controls that you use to reduce or eliminate worker exposure to the listed substance. Photocopy this question and complete it separately for each process type and work area.

CBI

[] Process type Production of Pliogrip 6000 Prepolymer

Work area 1 (Storage Tanks)

<u>Engineering Controls</u>	<u>Used (Y/N)</u>	<u>Year Installed</u>	<u>Upgraded (Y/N)</u>	<u>Year Upgraded</u>
Ventilation:				
Local exhaust	N	NA	NA	NA
General dilution	Y	NA	NA	NA
Other (specify)				
	NA	NA	NA	NA
Vessel emission controls	N	NA	NA	NA
Mechanical loading or packaging equipment	N	NA	NA	NA
Other (specify)				
Discontinued Use	Y	1988	NA	NA

☒ Mark (X) this box if you attach a continuation sheet.

9.13 Describe all equipment or process modifications you have made within the 3 years prior to the reporting year that have resulted in a reduction of worker exposure to the listed substance. For each equipment or process modification described, state the percentage reduction in exposure that resulted. Photocopy this question and complete it separately for each process type and work area.

CBI

☐ Process type Production of Pliogrip 6000 Prepolymer

Work area 1 (Storage Tanks)

<u>Equipment or Process Modification</u>	<u>Reduction in Worker Exposure Per Year (%)</u>
<u>Discontinued Use of Listed Substance</u>	<u>100%</u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>

☒ Mark (X) this box if you attach a continuation sheet.

PART D PERSONAL PROTECTIVE AND SAFETY EQUIPMENT

9.14 Describe the personal protective and safety equipment that your workers wear or use in each work area in order to reduce or eliminate their exposure to the listed substance. Photocopy this question and complete it separately for each process type and work area.

CBI

[] Process type Production of Plioqrip 6000 Prepolymer

Work area 1 (Storage Tanks)

<u>Equipment Types</u>	<u>Wear or Use (Y/N)</u>
Respirators	<u>N</u>
Safety goggles/glasses	<u>Y</u>
Face shields	<u>N</u>
Coveralls	<u>N</u>
Bib aprons	<u>N</u>
Chemical-resistant gloves	<u>Y</u>
Other (specify)	
_____	_____
_____	_____

[X] Mark (X) this box if you attach a continuation sheet.

- 9.15 If workers use respirators when working with the listed substance, specify for each process type, the work areas where the respirators are used, the type of respirators used, the average usage, whether or not the respirators were fit tested, and the type and frequency of the fit tests. Photocopy this question and complete it separately for each process type.

CBI

☐ Process type Production of Pliogrin 6000 Prepolymer

<u>Work Area</u>	<u>Respirator Type</u>	<u>Average Usage¹</u>	<u>Fit Tested (Y/N)</u>	<u>Type of Fit Test²</u>	<u>Frequency of Fit Tests (per year)</u>
<u>2</u>	<u>Organic Vapor Cartridge</u>	<u>B</u>	<u>Y</u>	<u>QL</u>	<u>1</u>
<u>3</u>	<u>Organic Vapor Cartridge</u>	<u>B</u>	<u>Y</u>	<u>QL</u>	<u>1</u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>

¹Use the following codes to designate average usage:

A = Daily

B = Weekly

C = Monthly

D = Once a year

E = Other (specify) _____

²Use the following codes to designate the type of fit test:

QL = Qualitative

QT = Quantitative

☐ Mark (X) this box if you attach a continuation sheet.

PART E WORK PRACTICES

- 9.19 Describe all of the work practices and administrative controls used to reduce or eliminate worker exposure to the listed substance (e.g., restrict entrance only to authorized workers, mark areas with warning signs, insure worker detection and monitoring practices, provide worker training programs, etc.). Photocopy this CBI question and complete it separately for each process type and work area.

☐

Process type Production of Pliogrip 6000 Prepolymer

Work area 1 (Storage Tanks)

1. Discontinued Use of Listed Substance During Fiscal 1988
 2. Worker Training Programs
 3. Provide Safety Glasses/Goggles
 4. Other Protective Equipment Available if Needed
-

- 9.20 Indicate (X) how often you perform each housekeeping task used to clean up routine leaks or spills of the listed substance. Photocopy this question and complete it separately for each process type and work area.

Process type Production of Pliogrip 6000 Prepolymer

Work area 1 (Storage Tanks)

<u>Housekeeping Tasks</u>	<u>Less Than Once Per Day</u>	<u>1-2 Times Per Day</u>	<u>3-4 Times Per Day</u>	<u>More Than 4 Times Per Day</u>
Sweeping	<u>X</u>	<u> </u>	<u> </u>	<u> </u>
Vacuuming	<u>X</u>	<u> </u>	<u> </u>	<u> </u>
Water flushing of floors	<u>X</u>	<u> </u>	<u> </u>	<u> </u>
Other (specify)				
<u>Leaks or spills of TDI are handled immediately.</u>				

☒ Mark (X) this box if you attach a continuation sheet.

9.21 Do you have a written medical action plan for responding to routine or emergency exposure to the listed substance?

RESPONSE NOT REQUIRED FOR TDI.

Routine exposure

Yes 1

No 2

Emergency exposure

Yes 1

No 2

If yes, where are copies of the plan maintained?

Routine exposure: _____

Emergency exposure: _____

9.22 Do you have a written leak and spill cleanup plan that addresses the listed substance? Circle the appropriate response.

Yes ①

No 2

If yes, where are copies of the plan maintained? on MSDS in QC Lab and Supervisors' Office

Has this plan been coordinated with state or local government response organizations? Circle the appropriate response.

Yes 1

No 2

9.23 Who is responsible for monitoring worker safety at your facility? Circle the appropriate response.

RESPONSE NOT REQUIRED FOR TDI.

Plant safety specialist 1

Insurance carrier 2

OSHA consultant 3

Other (specify) _____ 4

☐ Mark (X) this box if you attach a continuation sheet.

SECTION 10 ENVIRONMENTAL RELEASE

General Instructions:

Complete Part E (questions 10.23-10.35) for each non-routine release involving the listed substance that occurred during the reporting year. Report on all releases that are equal to or greater than the listed substance's reportable quantity value, RQ, unless the release is federally permitted as defined in 42 U.S.C. 9601, or is specifically excluded under the definition of release as defined in 40 CFR 302.3(22). Reportable quantities are codified in 40 CFR Part 302. If the listed substance is not a hazardous substance under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and, thus, does not have an RQ, then report releases that exceed 2,270 kg. If such a substance however, is designated as a CERCLA hazardous substance, then report those releases that are equal to or greater than the RQ. The facility may have answered these questions or similar questions under the Agency's Accidental Release Information Program and may already have this information readily available. Assign a number to each release and use this number throughout this part to identify the release. Releases over more than a 24-hour period are not single releases, i.e., the release of a chemical substance equal to or greater than an RQ must be reported as a separate release for each 24-hour period the release exceeds the RQ.

For questions 10.25-10.35, answer the questions for each release identified in question 10.23. Photocopy these questions and complete them separately for each release.

PART A GENERAL INFORMATION

10.01 Where is your facility located? Circle all appropriate responses.

CBI

- ☐ Industrial area ①
- Urban area ②
- Residential area ③
- Agricultural area ④
- Rural area 5
- Adjacent to a park or a recreational area 6
- Within 1 mile of a navigable waterway 7
- Within 1 mile of a school, university, hospital, or nursing home facility ⑧
- Within 1 mile of a non-navigable waterway ⑨
- Other (specify) _____ 10

☐ Mark (X) this box if you attach a continuation sheet.

10.02 Specify the exact location of your facility (from central point where process unit is located) in terms of latitude and longitude or Universal Transverse Mercader (UTM) coordinates.

Latitude 40 ° 53 ' 00 "

Longitude 82 ° 19 ' 20 "

UTM coordinates Zone _____, Northing _____, Easting _____

10.03 If you monitor meteorological conditions in the vicinity of your facility, provide the following information.

Average annual precipitation inches/year

Predominant wind direction

10.04 Indicate the depth to groundwater below your facility.

Depth to groundwater meters

10.05 For each on-site activity listed, indicate (Y/N/NA) all routine releases of the listed substance to the environment. (Refer to the instructions for a definition of Y, N, and NA.)

CBI

☐

On-Site Activity	Environmental Release		
	Air	Water	Land
Manufacturing	NA	NA	NA
Importing	NA	NA	NA
Processing	Y	N	N
Otherwise used	NA	NA	NA
Product or residual storage	N	N	N
Disposal	NA	NA	NA
Transport	N	N	N

☐ Mark (X) this box if you attach a continuation sheet.

10.06 Provide the following information for the listed substance and specify the level of precision for each item. (Refer to the instructions for further explanation and an example.)

CBI

☐

Quantity discharged to the air	23	kg/yr ± 20 %
Quantity discharged in wastewaters	NA	kg/yr ± ____ %
Quantity managed as other waste in on-site treatment, storage, or disposal units	NA	kg/yr ± ____ %
Quantity managed as other waste in off-site treatment, storage, or disposal units	UK	kg/yr ± ____ %

☐ Mark (X) this box if you attach a continuation sheet.

10.08 Describe the control technologies used to minimize release of the listed substance for each process stream containing the listed substance as identified in your process block or residual treatment block flow diagram(s). Photocopy this question and complete it separately for each process type.

CBI

☐ Process type Production of Pliogrip 6000 Prepolymer

<u>Stream ID Code</u>	<u>Control Technology</u>	<u>Percent Efficiency</u>
<u>7L, 7N, 7O, 7P</u>	<u>No Control Technology/Released to Atmosphere</u>	<u>NA</u>
<u>7M</u>	<u>No Control Technology/Released to Atmosphere</u>	<u>NA</u>
<u>7S, 7V</u>	<u>No Control Technology/Released to Atmosphere</u>	<u>NA</u>
<u>7X</u>	<u>No Control Technology/Released to Atmosphere</u>	<u>NA</u>
<u>7T, 7U</u>	<u>No Control Technology/Released to Atmosphere</u>	<u>NA</u>
<u>8A</u>	<u>No Control Technology/Landfill</u>	<u>NA</u>
<u>****</u>	<u>Use of Listed Substance Discontinued in Fiscal 1988</u>	

☐ Mark (X) this box if you attach a continuation sheet.

PART B RELEASE TO AIR

- 10.09 Point Source Emissions -- Identify each emission point source containing the listed substance in terms of a Stream ID Code as identified in your process block or residual treatment block flow diagram(s), and provide a description of each point source. Do not include raw material and product storage vents, or fugitive emission sources (e.g., equipment leaks). Photocopy this question and complete it separately for each process type.

CBI

☐

Process type Production of Pliogrip 6000 Prepolymer

Point Source
ID Code

Description of Emission Point Source

7S

Vent Fan for Reactor

7V

Vent Fan for Draw-Off Area

7X

Vacuum Pump Exhaust

☐ Mark (X) this box if you attach a continuation sheet.

☐ Mark (X) this box if you attach a continuation sheet.

10.10 Emission Characteristics -- Characterize the emissions for each Point Source ID Code identified in question 10.09 by completing the following table.

CBI

☐

Point Source ID Code	Physical State ¹	Average Emissions (kg/day)	Frequency ² (days/yr)	Duration ³ (min/day)	Average Emission Factor ⁴	Maximum Emission Rate (kg/min)	Maximum Emission Rate Frequency (events/yr)	Maximum Emission Rate Duration (min/event)
7S	V	0.24	60	500	0.0004	0.0005	63	480
7V	V	0.03	60	240	0.000056	0.00012	63	230
7X	V	0.0002	60	125	0.00000037	0.0000016	63	120

¹Use the following codes to designate physical state at the point of release:
G = Gas; V = Vapor; P = Particulate; A = Aerosol; O = Other (specify) _____

²Frequency of emission at any level of emission

³Duration of emission at any level of emission

⁴Average Emission Factor — Provide estimated (\pm 25 percent) emission factor (kg of emission per kg of production of listed substance)

10.11 Stack Parameters -- Identify the stack parameters for each Point Source ID Code identified in question 10.09 by completing the following table.

CBI

☐

Point Source ID Code	Stack Height(m)	Stack Inner Diameter (at outlet) (m)	Exhaust Temperature (°C)	Emission Exit Velocity (m/sec)	Building Height(m) ¹	Building Width(m) ²	Vent Type ³
7S,7V,7X	9.144	0.3556	Ambient-100	UK	6.15	55.47	V
*All are combined into one vent stack.							

¹Height of attached or adjacent building

²Width of attached or adjacent building

³Use the following codes to designate vent type:

H = Horizontal

V = Vertical

☐ Mark (X) this box if you attach a continuation sheet.

10.12 If the listed substance is emitted in particulate form, indicate the particle size distribution for each Point Source ID Code identified in question 10.09.
Photocopy this question and complete it separately for each emission point source.

CBI

NOT APPLICABLE

☐

Point source ID code

Size Range (microns)

Mass Fraction (% ± % precision)

< 1

≥ 1 to < 10

≥ 10 to < 30

≥ 30 to < 50

≥ 50 to < 100

≥ 100 to < 500

≥ 500

Total = 100%

☐ Mark (X) this box if you attach a continuation sheet.

PART C FUGITIVE EMISSIONS

10.13 Equipment Leaks -- Complete the following table by providing the number of equipment types listed which are exposed to the listed substance and which are in service according to the specified weight percent of the listed substance passing through the component. Do this for each process type identified in your process block or residual treatment block flow diagram(s). Do not include equipment types that are not exposed to the listed substance. If this is a batch or intermittently operated process, give an overall percentage of time per year that the process type is exposed to the listed substance. Photocopy this question and complete it separately for each process type.

CBI

☐ Process type Production of Pliogrin 6000 Prepolymer

Percentage of time per year that the listed substance is exposed to this process type 7 %

Equipment Type	Number of Components in Service by Weight Percent of Listed Substance in Process Stream					
	Less than 5%	5-10%	11-25%	26-75%	76-99%	Greater than 99%
Pump seals ¹						
Packed	NA	NA	NA	NA	NA	NA
Mechanical	NA	NA	NA	NA	NA	1
Double mechanical ²	NA	NA	NA	NA	NA	NA
Compressor seals ¹	NA	NA	NA	NA	NA	NA
Flanges	55	NA	5	NA	NA	40
Valves						
Gas ³	4	NA	NA	NA	NA	NA
Liquid	NA	NA	2	NA	NA	13
Pressure relief devices ⁴ (Gas or vapor only)	NA	NA	NA	NA	NA	NA
Sample connections						
Gas	NA	NA	NA	NA	NA	NA
Liquid	NA	NA	NA	NA	NA	NA
Open-ended lines ⁵ (e.g., purge, vent)						
Gas	1	NA	NA	NA	NA	1
Liquid	NA	NA	1	NA	NA	2

¹List the number of pump and compressor seals, rather than the number of pumps or compressors

10.13 continued on next page

☐ Mark (X) this box if you attach a continuation sheet.

10.13 (continued)

²If double mechanical seals are operated with the barrier (B) fluid at a pressure greater than the pump stuffing box pressure and/or equipped with a sensor (S) that will detect failure of the seal system, the barrier fluid system, or both, indicate with a "B" and/or an "S", respectively

³ Conditions existing in the valve during normal operation

⁴Report all pressure relief devices in service, including those equipped with control devices

⁵Lines closed during normal operation that would be used during maintenance operations

10.14 Pressure Relief Devices with Controls -- Complete the following table for those pressure relief devices identified in 10.13 to indicate which pressure relief devices in service are controlled. If a pressure relief device is not controlled, enter "None" under column c.

CBI

[]

[illegible]

¹Refer to the table in question 10.13 and record the percent range given under the heading entitled "Number of Components in Service by Weight Percent of Listed Substance" (e.g., <5%, 5-10%, 11-25%, etc.)

²The EPA assigns a control efficiency of 100 percent for equipment leaks controlled with rupture discs under normal operating conditions. The EPA assigns a control efficiency of 98 percent for emissions routed to a flare under normal operating conditions

☐ Mark (X) this box if you attach a continuation sheet.

10.15 Equipment Leak Detection -- If a formal leak detection and repair program is in place, complete the following table regarding those leak detection and repair procedures. Photocopy this question and complete it separately for each process type.

CBI

☐ Process type Production of Pliogrip 6000
Prepolymer

Equipment Type	Leak Detection	Detection Device ¹	Frequency of Leak Detection (per year)	Repairs Initiated (days after detection)	Repairs Completed (days after initiated)
	Concentration (ppm or mg/m ³) Measured at _____ Inches from Source				
Pump seals					
Packed	<u>No formal leak detection system</u>				
Mechanical					
Double mechanical					
Compressor seals					
Flanges					
Valves					
Gas					
Liquid					
Pressure relief devices (gas or vapor only)					
Sample connections					
Gas					
Liquid					
Open-ended lines					
Gas					
Liquid					

¹Use the following codes to designate detection device:

POVA = Portable organic vapor analyzer

FPM = Fixed point monitoring

0 = Other (specify) _____

☐ Mark (X) this box if you attach a continuation sheet.

10.16 Raw Material, Intermediate and Product Storage Emissions - - Complete the following table by providing the information on each liquid raw material, intermediate, and product storage vessel containing the listed substance as identified in your process block or residual treatment block flow diagram(s).

CBI

Vessel Type ¹	Floating Roof Seals ²	Composition of Stored Materials ³	Throughput (liters per year)	Vessel Filling Rate (gpm)	Vessel Filling Duration (min)	Vessel Inner Diameter (m)	Vessel Height (m)	Operating Vessel Volume (l)	Vessel Emission Controls ⁴	Design Flow Rate ⁵	Vent Diameter (cm)	Control Efficiency (%)	Basis for Estimate ⁶
F	NA	100	5.36	40	150	3.66	3.94	13,250	None	NA	20.32	99.99	C
P	(45psig) NA	Varies	11.71	30	5	1.78	2.29	3,300	None	NA	35.56	99.96	C
F	NA	14.5	NA	3.7	15	0.56	0.81	210	None	NA	NA	100	S

¹Use the following codes to designate vessel type:

F = Fixed roof
 CIF = Contact internal floating roof
 NCIF = Noncontact internal floating roof
 EFR = External floating roof
 P = Pressure vessel (indicate pressure rating)
 H = Horizontal
 U = Underground

²Use the following codes to designate floating roof seals:

MS1 = Mechanical shoe, primary
 MS2 = Shoe-mounted secondary
 MS2R = Rim-mounted, secondary
 LM1 = Liquid-mounted resilient filled seal, primary
 LM2 = Rim-mounted shield
 LMW = Weather shield
 VM1 = Vapor mounted resilient filled seal, primary
 VM2 = Rim-mounted secondary
 VMW = Weather shield

³Indicate weight percent of the listed substance. Include the total volatile organic content in parenthesis

⁴Other than floating roofs

⁵Gas/vapor flow rate the emission control device was designed to handle (specify flow rate units)

⁶Use the following codes to designate basis for estimate of control efficiency:

C = Calculations
 S = Sampling

PART E NON-ROUTINE RELEASES

10.23 Indicate the date and time when the release occurred and when the release ceased or was stopped. If there were more than six releases, attach a continuation sheet and list all releases.

<u>Release</u>	<u>Date Started</u>	<u>Time (am/pm)</u>	<u>Date Stopped</u>	<u>Time (am/pm)</u>
<u>1</u>	<u>NOT APPLICABLE - No Non-Routine Releases of TDI</u>			
<u>2</u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u>3</u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u>4</u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u>5</u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u>6</u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>

10.24 Specify the weather conditions at the time of each release.

RESPONSE NOT REQUIRED FOR TDI					
<u>Release</u>	<u>Wind Speed (km/hr)</u>	<u>Wind Direction</u>	<u>Humidity (%)</u>	<u>Temperature (°C)</u>	<u>Precipitation (Y/N)</u>
<u>1</u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u>2</u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u>3</u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u>4</u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u>5</u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u>6</u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>

☐ Mark (X) this box if you attach a continuation sheet.

APPENDIX I: List of Continuation Sheets

Attach continuation sheets for sections of this form and optional information after this page. In column 1, clearly identify the continuation sheet by listing the question number to which it relates. In column 2, enter the inclusive page numbers of the continuation sheet for each question number.

[illegible]

☐ Mark (X) this box if you attach a continuation sheet.


**MATERIAL SAFETY
DATA SHEET**

24-HOUR EMERGENCY TELEPHONE (606) 324-1133

042922

TOLUENE DIISOCYANATE LO ACIDTY

Page: 1

THIS MSDS COMPLIES WITH 29 CFR 1910.1200 (THE HAZARD COMMUNICATION STANDARD)

Product Name: TOLUENE DIISOCYANATE LO ACIDTY

 ASHLAND CHEMICAL CO.
1745 COTTAGE ST.
ASHLAND, OH 44805

03 542 -

 PRODUCT: 030108
INVOICE: ACCLOC
INVOICE DATE: 01/11/89
TO:

 030-108
Data Sheet No: 0003618-004
Prepared: 08/03/87
Supersedes: 08/28/86

**** INTERCOMPANY MAIL ****

SECTION I-PRODUCT IDENTIFICATION

General or Generic ID: DIISOCYANATE

DOT Hazard Classification: POISON CLASS B (173.343)

BEST COPY AVAILABLE
SECTION III-COMPONENTS

 IF PRESENT, IARC, NTP AND OSHA CARCINOGENS AND CHEMICALS SUBJECT TO THE REPORT-
ING REQUIREMENTS OF SARA TITLE III SECTION 313 ARE IDENTIFIED IN THIS SECTION.
SEE DEFINITION PAGE FOR CLARIFICATION

INGREDIENT	% (by WT)	PEL	TLV	Note
TOLUENE DIISOCYANATE CAS #: 26471-62-5	100 Identified as a CARCINOGEN by NTP	0.02 PPM - CEILING	0.02 PPM - CEILING	(1)

Notes:

- (1) ACGIH - SHORT TERM EXPOSURE LIMIT (STEL) FOR TOLUENE DIISOCYANATE IS 0.02 PPM. NIOSH RECOMMENDS A LIMIT OF 0.005 PPM, 8-HOUR TWA; 0.02 PPM 10 MINUTE CEILING. TDI CONTAINS APPROX. 80% 2,4-TOLUENE DIISOCYANATE (CAS# 584-84-9) AND 20% 2,6-TOLUENE DIISOCYANATE (CAS# 91-08-7).

SECTION III-PHYSICAL DATA

Boiling Point	for PRODUCT	(484.00 Deg F 251.11 Deg C) (760.00 mm Hg)
Vapor Pressure	for PRODUCT	< 0.01 mm Hg (68.00 Deg F 20.00 Deg C)
Specific Vapor Density	AIR = 1	6.0
Specific Gravity		1.220 (60.00 Deg F 15.55 Deg C)
Percent Volatiles	NOT APPLICABLE	
Evaporation Rate		SLOWER THAN ETHER

SECTION IV-FIRE AND EXPLOSION INFORMATION

FLASH POINT(COC) 270.0 Deg F (132.2 Deg C)

EXPLOSIVE LIMIT (PRODUCT) LOWER - .9%

EXTINGUISHING MEDIA: WATER FOG OR CARBON DIOXIDE OR DRY CHEMICAL

HAZARDOUS DECOMPOSITION PRODUCTS: MAY FORM TOXIC MATERIALS:, CARBON DIOXIDE AND CARBON MONOXIDE, NITROGEN COMPOUNDS, VARIOUS HYDROCARBONS, HYDROGEN CYANIDE, ETC.

FIREFIGHTING PROCEDURES: WATER MAY BE USED TO KEEP FIRE-EXPOSED CONTAINERS COOL UNTIL FIRE IS OUT.

NEAR SELF-CONTAINED BREATHING APPARATUS WITH A FULL FACEPIECE OPERATED IN THE POSITIVE PRESSURE DEMAND MODE AND FULL BODY PROTECTION WHEN FIGHTING FIRES.

SPECIAL FIRE & EXPLOSION HAZARDS: NEVER USE WELDING OR CUTTING TORCH ON OR NEAR DRUM (EVEN EMPTY) BECAUSE PRODUCT (EVEN JUST RESIDUE) CAN IGNITE EXPLOSIVELY.

SECTION V-HEALTH HAZARD DATA

PERMISSIBLE EXPOSURE LEVEL .02 PPM - CEILING

THRESHOLD LIMIT VALUE .02 PPM - CEILING

EFFECTS OF ACUTE OVEREXPOSURE: FOR PRODUCT

EYES - CAUSES IRRITATION, BURNS IF NOT REMOVED.

SKIN - CAN CAUSE REDDENING, IRRITATION, DERMATITIS, POSSIBLE SENSITIZATION.

BREATHING - CAN CAUSE NASAL AND RESPIRATORY IRRITATION, TIGHTNESS OF CHEST, COUGHING, HEADACHE, AND SHORTNESS OF

BREATH. CAN CAUSE ALLERGIC SENSITIZATION.

SWALLOWING - CAN CAUSE GASTROINTESTINAL IRRITATION, NAUSEA, VOMITING, AND DIARRHEA. ASPIRATION OF MATERIAL INTO

THE LUNGS CAN CAUSE CHEMICAL PNEUMONITIS WHICH CAN BE FATAL.

FIRST AID:

IF ON SKIN: THOROUGHLY WASH EXPOSED AREA WITH SOAP AND WATER. IF IRRITATION OR RASH DEVELOPS, GET MEDICAL


**MATERIAL SAFETY
DATA SHEET**

24-HOUR EMERGENCY TELEPHONE (606) 324-1133

042922

TOLUENE DIISOCYANATE LO ACIDTY

Page: 2

SECTION V-HEALTH HAZARD DATA (Continued)

ATTENTION. REMOVE CONTAMINATED CLOTHING. LAUNDRY CONTAMINATED CLOTHING BEFORE RE-USE.

IF IN EYES: IMMEDIATELY FLUSH WITH LARGE AMOUNTS OF WATER FOR AT LEAST 15 MINUTES, LIFTING UPPER AND LOWER LIDS OCCASIONALLY. GET IMMEDIATE MEDICAL ATTENTION.

IF SWALLOWED: DO NOT INDUCE VOMITING, KEEP PERSON WARM, QUIET, AND GET MEDICAL ATTENTION. ASPIRATION OF MATERIAL INTO THE LUNGS DUE TO VOMITING CAN CAUSE CHEMICAL PNEUMONITIS WHICH CAN BE FATAL.

IF BREATHED: IF AFFECTED, REMOVE INDIVIDUAL TO FRESH AIR. IF TIGHTNESS OR CONGESTION IN CHEST DEVELOPS, GET MEDICAL ATTENTION.

PRIMARY ROUTE(S) OF ENTRY:

INHALATION, SKIN CONTACT

BEST COPY AVAILABLE

EFFECTS OF CHRONIC OVEREXPOSURE: FOR PRODUCT

THE NATIONAL TOXICOLOGY PROGRAM (NTP) HAS CONCLUDED THAT THERE IS SUFFICIENT EVIDENCE TO INCLUDE TOLUENE DIISOCYANATE (TDI) ON THEIR LIST AS A SUSPECT CARCINOGEN. NTP REFERENCED INFORMATION OF A STUDY WHICH INDICATED THAT WHEN RATS AND FEMALE MICE WERE ADMINISTERED TDI BY GAVAGE (GASTRIC ROUTE), PANCREATIC, LIVER AND MAMMALIAN (FEMALE MICE) NEOPLASMS WERE OBSERVED. AS TO DATE, THERE HAVE BEEN NO REPORTS OF CARCINOGENICITY IN ANIMAL INHALATION STUDIES NOR HAVE THERE BEEN ANY REPORTS OF EXCESS CANCER OCCURRENCES IN INDUSTRY WHICH COULD BE RELATED TO TDI EXPOSURE.

OVEREXPOSURE TO THIS MATERIAL (OR ITS COMPONENTS) HAS BEEN SUGGESTED AS A CAUSE OF THE FOLLOWING EFFECTS IN HUMANS: RESPIRATORY SENSITIZATION, SKIN SENSITIZATION

SECTION VI-REACTIVITY DATA

HAZARDOUS POLYMERIZATION: CAN OCCUR -- AVOID CONTACT WITH STRONG ALKALIES, STRONG MINERAL ACIDS, AND WATER.

STABILITY: STABLE

INCOMPATIBILITY: AVOID CONTACT WITH: STRONG ALKALIES, WATER, AMINES, STRONG MINERAL ACIDS.

SECTION VII-SPILL OR LEAK PROCEDURES
STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

SMALL SPILL: ABSORB LIQUID ON PAPER, VERMICULITE, FLOOR ABSORBENT, OR OTHER ABSORBENT MATERIAL AND TRANSFER TO HOOD.

LARGE SPILL: PERSONS NOT WEARING PROTECTIVE EQUIPMENT SHOULD BE EXCLUDED FROM AREA OF SPILL UNTIL CLEAN-UP HAS BEEN COMPLETED. STOP SPILL AT SOURCE, DIKE AREA OF SPILL TO PREVENT SPREADING, PUMP LIQUID TO SALVAGE TANK. NEUTRALIZE SPILL WITH AN AQUEOUS SOLUTION OF AMMONIA. REMAINING LIQUID MAY BE TAKEN UP ON SAND, CLAY, EARTH, FLOOR ABSORBENT, OR OTHER ABSORBENT MATERIAL AND SHOVELED INTO CONTAINERS.

WASTE DISPOSAL METHOD:

SMALL SPILL: DESTROY BY INCINERATION IN ACCORDANCE WITH APPLICABLE REGULATIONS.

LARGE SPILL: DESTROY BY LIQUID INCINERATION IN ACCORDANCE WITH APPLICABLE REGULATIONS.

SECTION VIII-PROTECTIVE EQUIPMENT TO BE USED

RESPIRATORY PROTECTION: IF WORKPLACE EXPOSURE LIMIT(S) OF PRODUCT OR ANY COMPONENT IS EXCEEDED (SEE SECTION II), A NIOSH/MSHA APPROVED AIR SUPPLIED RESPIRATOR IS ADVISED IN ABSENCE OF PROPER ENVIRONMENTAL CONTROL. OSHA REGULATIONS ALSO PERMIT OTHER NIOSH/MSHA RESPIRATORS (NEGATIVE PRESSURE TYPE) UNDER SPECIFIED CONDITIONS (SEE YOUR SAFETY EQUIPMENT SUPPLIER). ENGINEERING OR ADMINISTRATIVE CONTROLS SHOULD BE IMPLEMENTED TO REDUCE EXPOSURE.

VENTILATION: PROVIDE SUFFICIENT MECHANICAL (GENERAL AND/OR LOCAL EXHAUST) VENTILATION TO MAINTAIN EXPOSURE BELOW TLV(S).

PROTECTIVE GLOVES: WEAR RESISTANT GLOVES SUCH AS: NATURAL RUBBER

EYE PROTECTION: CHEMICAL SPLASH GOGGLES IN COMPLIANCE WITH OSHA REGULATIONS ARE ADVISED; HOWEVER, OSHA REGULATIONS ALSO PERMIT OTHER TYPE SAFETY GLASSES. (CONSULT YOUR SAFETY EQUIPMENT SUPPLIER)

OTHER PROTECTIVE EQUIPMENT: TO PREVENT REPEATED OR PROLONGED SKIN CONTACT, WEAR IMPERVIOUS CLOTHING AND BOOTS.

SECTION IX-SPECIAL PRECAUTIONS OR OTHER COMMENTS

CONTAINERS OF THIS MATERIAL MAY BE HAZARDOUS WHEN EMPTIED. SINCE EMPTIED CONTAINERS RETAIN PRODUCT RESIDUES (VAPOR, LIQUID, AND/OR SOLID), ALL HAZARD PRECAUTIONS GIVEN IN THIS DATASHEET MUST BE OBSERVED.

THE INFORMATION ACCUMULATED HEREIN IS BELIEVED TO BE ACCURATE BUT IS NOT WARRANTED TO BE WHETHER ORIGINATING WITH THE COMPANY OR NOT. RECIPIENTS ARE ADVISED TO CONFIRM IN ADVANCE OF NEED THAT THE INFORMATION IS CURRENT, APPLICABLE, AND SUITABLE TO THEIR CIRCUMSTANCES.


**MATERIAL SAFETY
DATA SHEET**

24-HOUR EMERGENCY TELEPHONE (606) 324-1133

DEFINITIONS

This definition page is intended for use with Material Safety Data Sheets supplied by the Ashland Chemical Company. Recipients of these data sheets should consult the OSHA Safety and Health Standards (29 CFR 1910), particularly subpart G - Occupational Health and Environmental Control, and subpart I - Personal Protective Equipment, for general guidance on control of potential Occupational Health and Safety Hazards.

**SECTION I
PRODUCT IDENTIFICATION**

GENERAL OR GENERIC ID: Chemical family or product description.

DOT HAZARD CLASSIFICATION: Product meets DOT criteria for hazards listed.

**SECTION II
COMPONENTS**

Components are listed in this section if they present a physical or health hazard and are present at or above 1% in the mixture. If a component is identified as a CARCINOGEN by NTP, IARC or OSHA as of the date on the MSDS, it will be listed and footnoted in this section when present at or above 0.1% in the product. Negative conclusions concerning carcinogenicity are not reported. Additional health information may be found in Section V. Components subject to the reporting requirements of Section 313 of SARA Title III are identified in the footnotes in this section, along with typical percentages. Other components may be listed if deemed appropriate.

Exposure recommendations are for components. OSHA Permissible Exposure Limits (PELs) and American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLVs) appear on the line with the component identification. Other recommendations appear as footnotes.

**SECTION III
PHYSICAL DATA**

BOILING POINT: Of product if known. The lowest value of the components is listed for mixtures.

VAPOR PRESSURE: Of product if known. The highest value of the components is listed for mixtures.

SPECIFIC VAPOR DENSITY: Compared to AIR = 1. If Specific Vapor Density of product is not known, the value is expressed as lighter or heavier than air.

SPECIFIC GRAVITY: Compared to WATER = 1. If Specific Gravity of product is not known, the value is expressed as less than or greater than water.

pH: If applicable.

PERCENT VOLATILES: Percentage of material with initial boiling point below 425 degrees Fahrenheit.

EVAPORATION RATE: Indicated as faster or slower than ETHYL ETHER, unless otherwise stated.

**SECTION IV
FIRE AND EXPLOSION DATA**

FLASH POINT: Method identified.

EXPLOSION LIMITS: For product if known. The lowest value of the components is listed for mixtures.

HAZARDOUS DECOMPOSITION PRODUCTS: Known or expected hazardous products resulting from heating, burning or other reactions.

SECTION IV (cont.)

EXTINGUISHING MEDIA: Following National Fire Protection Association criteria.

FIREFIGHTING PROCEDURES: Minimum equipment to protect firefighters from toxic products of vaporization, combustion or decomposition in fire situations. Other firefighting hazards may also be indicated.

SPECIAL FIRE AND EXPLOSION HAZARDS: States hazards not covered by other sections.

NFPA CODES: Hazard ratings assigned by the National Fire Protection Association.

**SECTION V
HEALTH HAZARD DATA**

PERMISSIBLE EXPOSURE LIMIT: For product.

THRESHOLD LIMIT VALUE: For product.

EFFECTS OF ACUTE OVEREXPOSURE: Potential local and systemic effects due to single or short term overexposure to the eyes and skin or through inhalation or ingestion.

EFFECTS OF CHRONIC OVEREXPOSURE: Potential local and systemic effects due to repeated or long term overexposure to the eyes and skin or through inhalation or ingestion.

FIRST AID: Procedures to be followed when dealing with accidental overexposure.

PRIMARY ROUTE OF ENTRY: Based on properties and expected use.

**SECTION VI
REACTIVITY DATA**

HAZARDOUS POLYMERIZATION: Conditions to avoid to prevent hazardous polymerization resulting in a large release of energy.

STABILITY: Conditions to avoid to prevent hazardous or violent decomposition.

INCOMPATIBILITY: Materials and conditions to avoid to prevent hazardous reactions.

**SECTION VII
SPILL OR LEAK PROCEDURES**

Reasonable precautions to be taken and methods of containment, clean-up and disposal. Consult federal, state and local regulations for accepted procedures and any reporting or notification requirements.

**SECTION VIII
PROTECTIVE EQUIPMENT TO BE USED**

Protective equipment which may be needed when handling the product.

**SECTION IX
SPECIAL PRECAUTIONS OR OTHER COMMENTS**

Covers any relevant points not previously mentioned.

ADDITIONAL COMMENTS

Containers should be either reconditioned by CERTIFIED firms or properly disposed of by APPROVED firms. Disposal of containers should be in accordance with applicable laws and regulations. "EMPTY" drums should not be given to individuals. Serious accidents have resulted from the misuse of "EMPTIED" containers (drums, pails, etc.). Refer to Sections IV and IX.


**MATERIAL SAFETY
DATA SHEET**

24-HOUR EMERGENCY TELEPHONE (606) 324-1133

042862

PLIOGRIP 6000

Page: 1

THIS MSDS COMPLIES WITH 29 CFR 1910.1200 (THE HAZARD COMMUNICATION STANDARD)

Product Name: PLIOGRIP 6000

 ASHLAND CHEMICAL CO.
1745 COTTAGE ST.
ASHLAND, OH 44805

03 542 -

 Data Sheet No: 0171496-004
Prepared: 08/03/87
Supersedes: 03/04/86

 PRODUCT: 583002
INVOICE: ACCLOC
INVOICE DATE: 01/11/89
TO:

**** INTERCOMPANY MAIL ****

SECTION I-PRODUCT IDENTIFICATION

General or Generic ID: URETHANE PREPOLYMER

DOT Hazard Classification: NOT APPLICABLE

BEST COPY AVAILABLE

SECTION II-COMPONENTS

 IF PRESENT, IARC, NTP AND OSHA CARCINOGENS AND CHEMICALS SUBJECT TO THE REPORT-
ING REQUIREMENTS OF SARA TITLE III SECTION 313 ARE IDENTIFIED IN THIS SECTION.
SEE DEFINITION PAGE FOR CLARIFICATION

INGREDIENT	% (by WT)	PEL	TLV	Note
POLYURETHANE POLYMER	48-52			(1)
TALC CAS #: 14807-96-6	25-30	3 MG/M3	2 MG/M3	(2)
TOLUENE DIISOCYANATE CAS #: 26471-62-5	15 Identified as a CARCINOGEN by NTP	0.02 PPM - CEILING	0.02 PPM - CEILING	(3)
METHYLENEDIPHENYLENE ISOCYANATE OLIGOMER CAS #: 9016-87-9	5-10	0.02 PPM - CEILING	0.02 PPM - CEILING	(4)

Notes:

- (1) PEL/TLV NOT ESTABLISHED FOR THIS MATERIAL
- (2) AS RESPIRABLE DUST. PEL REPRESENTS A CONVERSION FROM MPPCF TO MG/CUM.
- (3) ACGIH - SHORT TERM EXPOSURE LIMIT (STEL) FOR TOLUENE DIISOCYANATE IS 0.02 PPM. NIOSH RECOMMENDS A LIMIT OF 0.005 PPM, 8-HOUR TWA; 0.02 PPM 10 MINUTE CEILING. TDI CONTAINS APPROX. 80% 2,4-TOLUENE DIISOCYANATE (CAS# 584-84-9) AND 20% 2,6-TOLUENE DIISOCYANATE (CAS# 91-08-7).
- (4) THIS MATERIAL CONTAINS 55% METHYLENE PHENYLENE ISOCYANATE (MDI) (CAS # 101-68-8) WHICH IS SUBJECT TO THE REPORTING REQUIREMENTS OF SECTION 313 OF SARA TITLE III.

SECTION III-PHYSICAL DATA

Boiling Point	for COMPONENT(5-10%)	406.00 Deg F (207.77 Deg C) 5.00 mm Hg
Vapor Pressure	for COMPONENT(15%)	< 0.01 mm Hg (68.00 Deg F 20.00 Deg C)
Specific Vapor Density		HEAVIER THAN AIR
Specific Gravity		1.320 (68.00 Deg F 20.00 Deg C)
Percent Volatiles		10-15%
Evaporation Rate		SLOWER THAN ETHER
Appearance		TAN HEAVY SYRUP
State		LIQUID

SECTION IV-FIRE AND EXPLOSION INFORMATION

FLASH POINT(TOC) 270.0 Deg F (132.2 Deg C)

EXPLOSIVE LIMIT (LOWEST VALUE OF COMPONENT) LOWER - .9%

EXTINGUISHING MEDIA: REGULAR FOAM OR WATER FOG OR CARBON DIOXIDE OR DRY CHEMICAL

HAZARDOUS DECOMPOSITION PRODUCTS: MAY FORM TOXIC MATERIALS: CARBON DIOXIDE AND CARBON MONOXIDE, VARIOUS HYDROCARBONS, NITROGEN COMPOUNDS, HYDROGEN CYANIDE, ETC.

FIREFIGHTING PROCEDURES: WEAR SELF-CONTAINED BREATHING APPARATUS WITH A FULL FACEPIECE OPERATED IN THE POSITIVE PRESSURE DEMAND MODE AND FULL BODY PROTECTION WHEN FIGHTING FIRES.

WATER OR FOAM MAY CAUSE FROTHING WHICH CAN BE VIOLENT AND POSSIBLY ENDANGER THE LIFE OF THE FIREFIGHTER,


**MATERIAL SAFETY
DATA SHEET**

24-HOUR EMERGENCY TELEPHONE (606) 324-1133

042862

PLIOGRIP 6000

Page: 2

SECTION IV - FIRE AND EXPLOSION INFORMATION (Continued)

ESPECIALLY IF SPRAYED INTO CONTAINERS OF HOT, BURNING LIQUID.

SPECIAL FIRE & EXPLOSION HAZARDS: NEVER USE WELDING OR CUTTING TORCH ON OR NEAR DRUM (EVEN EMPTY) BECAUSE PRODUCT (EVEN JUST RESIDUE) CAN IGNITE EXPLOSIVELY.

SECTION V - HEALTH HAZARD DATA

PERMISSIBLE EXPOSURE LEVEL: NOT ESTABLISHED FOR PRODUCT; SEE SECTION II AND SECTION IX.

EFFECTS OF ACUTE OVEREXPOSURE: FOR PRODUCT

EYES - CAN CAUSE SEVERE IRRITATION, REDNESS, TEARING, BLURRED VISION.

SKIN - CAN CAUSE REDDENING, IRRITATION, DERMATITIS, POSSIBLE SENSITIZATION.

BREATHING - CAN CAUSE NASAL AND RESPIRATORY IRRITATION, TIGHTNESS OF CHEST, COUGHING, HEADACHE, AND SHORTNESS OF BREATH. CAN CAUSE ALLERGIC SENSITIZATION.

SWALLOWING - CAN CAUSE GASTROINTESTINAL IRRITATION, NAUSEA, VOMITING, AND DIARRHEA.

FIRST AID:

IF ON SKIN: THOROUGHLY WASH EXPOSED AREA WITH SOAP AND WATER. IF IRRITATION OR RASH DEVELOPS, GET MEDICAL ATTENTION. REMOVE CONTAMINATED CLOTHING. LAUNDER CONTAMINATED CLOTHING BEFORE RE-USE.

IF IN EYES: FLUSH WITH LARGE AMOUNTS OF WATER, LIFTING UPPER AND LOWER LIDS OCCASIONALLY, GET MEDICAL ATTENTION.

IF SWALLOWED: DO NOT INDUCE VOMITING. VOMITING WILL CAUSE FURTHER DAMAGE TO THE THROAT. DILUTE BY GIVING WATER. GIVE MILK OF MAGNESIA. KEEP WARM, QUIET. GET MEDICAL ATTENTION IMMEDIATELY.

IF BREATHED: IF AFFECTED, REMOVE INDIVIDUAL TO FRESH AIR. IF TIGHTNESS OR CONGESTION IN CHEST DEVELOPS, GET MEDICAL ATTENTION.

PRIMARY ROUTE(S) OF ENTRY:

INHALATION, SKIN CONTACT

BEST COPY AVAILABLE

EFFECTS OF CHRONIC OVEREXPOSURE: FOR PRODUCT

PROLONGED INHALATION OF TALC DUST IN HIGH CONCENTRATIONS CAN CAUSE PULMONARY FIBROSIS.

THE NATIONAL TOXICOLOGY PROGRAM (NTP) HAS CONCLUDED THAT THERE IS SUFFICIENT EVIDENCE TO INCLUDE TOLUENE DIISOCYANATE (TDI) ON THEIR LIST AS A SUSPECT CARCINOGEN. NTP REFERENCED INFORMATION OF A STUDY WHICH INDICATED THAT WHEN RATS AND FEMALE MICE WERE ADMINISTERED TDI BY GAVAGE (GASTRIC ROUTE), PANCREATIC, LIVER AND MAMMALIAN (FEMALE MICE) NEOPLASMS WERE OBSERVED. AS TO DATE, THERE HAVE BEEN NO REPORTS OF CARCINOGENICITY IN ANIMAL INHALATION STUDIES NOR HAVE THERE BEEN ANY REPORTS OF EXCESS CANCER OCCURRENCES IN INDUSTRY WHICH COULD BE RELATED TO TDI EXPOSURE.

OVEREXPOSURE TO THIS MATERIAL (OR ITS COMPONENTS) HAS BEEN SUGGESTED AS A CAUSE OF THE FOLLOWING EFFECTS IN HUMANS: RESPIRATORY SENSITIZATION, SKIN SENSITIZATION

SECTION VI - REACTIVITY DATA

HAZARDOUS POLYMERIZATION: CAN OCCUR -- AVOID CONTACT WITH STRONG ALKALIES, STRONG MINERAL ACIDS, AND WATER.

STABILITY: STABLE

INCOMPATIBILITY: AVOID CONTACT WITH: STRONG ALKALIES., STRONG MINERAL ACIDS., WATER

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

SMALL SPILL: ABSORB LIQUID ON PAPER, VERMICULITE, FLOOR ABSORBENT, OR OTHER ABSORBENT MATERIAL AND TRANSFER TO HOOD.

LARGE SPILL: PERSONS NOT WEARING PROTECTIVE EQUIPMENT SHOULD BE EXCLUDED FROM AREA OF SPILL UNTIL CLEAN-UP HAS BEEN COMPLETED. STOP SPILL AT SOURCE, DIKE AREA OF SPILL TO PREVENT SPREADING, PUMP LIQUID TO SALVAGE TANK. NEUTRALIZE SPILL WITH AN AQUEOUS SOLUTION OF AMMONIA. REMAINING LIQUID MAY BE TAKEN UP ON SAND, CLAY, EARTH, FLOOR ABSORBENT, OR OTHER ABSORBENT MATERIAL AND SHOVELED INTO CONTAINERS.

WASTE DISPOSAL METHOD:

SMALL SPILL: ALLOW VOLATILE PORTION TO EVAPORATE IN HOOD. ALLOW SUFFICIENT TIME FOR VAPORS TO COMPLETELY CLEAR HOOD DUCT WORK. DISPOSE OF REMAINING MATERIAL IN ACCORDANCE WITH APPLICABLE REGULATIONS.

LARGE SPILL: DESTROY BY LIQUID INCINERATION IN ACCORDANCE WITH APPLICABLE REGULATIONS.

SECTION VIII - PROTECTIVE EQUIPMENT TO BE USED

RESPIRATORY PROTECTION: IF WORKPLACE EXPOSURE LIMIT(S) OF PRODUCT OR ANY COMPONENT IS EXCEEDED (SEE SECTION II), A NIOSH/MSHA APPROVED AIR SUPPLIED RESPIRATOR IS ADVISED IN ABSENCE OF PROPER ENVIRONMENTAL CONTROL. OSHA REGULATIONS ALSO PERMIT OTHER NIOSH/MSHA RESPIRATORS (NEGATIVE PRESSURE TYPE) UNDER SPECIFIED CONDITIONS (SEE YOUR SAFETY EQUIPMENT SUPPLIER). ENGINEERING OR ADMINISTRATIVE CONTROLS SHOULD BE IMPLEMENTED TO REDUCE EXPOSURE.

VENTILATION: PROVIDE SUFFICIENT MECHANICAL (GENERAL AND/OR LOCAL EXHAUST) VENTILATION TO MAINTAIN EXPOSURE BELOW TLV(S).

PROTECTIVE GLOVES: WEAR RESISTANT GLOVES SUCH AS: NATURAL RUBBER, POLYVINYL ALCOHOL

EYE PROTECTION: CHEMICAL SPLASH GOGGLES IN COMPLIANCE WITH OSHA REGULATIONS ARE ADVISED; HOWEVER, OSHA REGULATIONS ALSO PERMIT OTHER TYPE SAFETY GLASSES. (CONSULT YOUR SAFETY EQUIPMENT SUPPLIER)

OTHER PROTECTIVE EQUIPMENT: TO PREVENT REPEATED OR PROLONGED SKIN CONTACT, WEAR IMPERVIOUS CLOTHING AND BOOTS.

**MATERIAL SAFETY
DATA SHEET**

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~~SECTION IX-SPECIAL PRECAUTIONS OR OTHER COMMENTS~~

CONTAINERS OF THIS MATERIAL MAY BE HAZARDOUS WHEN EMPTIED. SINCE EMPTIED CONTAINERS RETAIN PRODUCT RESIDUES (VAPOR, LIQUID, AND/OR SOLID), ALL HAZARD PRECAUTIONS GIVEN IN THIS DATASHEET MUST BE OBSERVED.

EXPOSURE TO AEROSOLS AND MISTS WHEN MATERIAL IS SPRAYED MAY PRESENT A GREATER RISK OF INJURY FROM COMPONENTS BECAUSE HIGHER CONCENTRATIONS ARE IN THE ATMOSPHERE THAN RESULT FROM VAPOR ALONE. PROVIDE ADEQUATE VENTILATION AND IF NECESSARY, USE RESPIRATORY PROTECTION.

THE INFORMATION ACCUMULATED HEREIN IS BELIEVED TO BE ACCURATE BUT IS NOT WARRANTED TO BE WHETHER ORIGINATING WITH THE COMPANY OR NOT. RECIPIENTS ARE ADVISED TO CONFIRM IN ADVANCE OF NEED THAT THE INFORMATION IS CURRENT, APPLICABLE, AND SUITABLE TO THEIR CIRCUMSTANCES.

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**MATERIAL SAFETY
DATA SHEET**

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DEFINITIONS

This definition page is intended for use with Material Safety Data Sheets supplied by the Ashland Chemical Company. Recipients of these data sheets should consult the OSHA Safety and Health Standards (29 CFR 1910), particularly subpart G - Occupational Health and Environmental Control, and subpart I - Personal Protective Equipment, for general guidance on control of potential Occupational Health and Safety Hazards.

**SECTION I
PRODUCT IDENTIFICATION**

GENERAL OR GENERIC ID: Chemical family or product description.

DOT HAZARD CLASSIFICATION: Product meets DOT criteria for hazards listed.

**SECTION II
COMPONENTS**

Components are listed in this section if they present a physical or health hazard and are present at or above 1% in the mixture. If a component is identified as a CARCINOGEN by NTP, IARC or OSHA as of the date on the MSDS, it will be listed and footnoted in this section when present at or above 0.1% in the product. Negative conclusions concerning carcinogenicity are not reported. Additional health information may be found in Section V. Components subject to the reporting requirements of Section 313 of SARA Title III are identified in the footnotes in this section, along with typical percentages. Other components may be listed if deemed appropriate.

Exposure recommendations are for components. OSHA Permissible Exposure Limits (PELs) and American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLVs) appear on the line with the component identification. Other recommendations appear as footnotes.

**SECTION III
PHYSICAL DATA**

BOILING POINT: Of product if known. The lowest value of the components is listed for mixtures.

VAPOR PRESSURE: Of product if known. The highest value of the components is listed for mixtures.

SPECIFIC VAPOR DENSITY: Compared to AIR = 1. If Specific Vapor Density of product is not known, the value is expressed as lighter or heavier than air.

SPECIFIC GRAVITY: Compared to WATER = 1. If Specific Gravity of product is not known, the value is expressed as less than or greater than water.

pH: If applicable.

PERCENT VOLATILES: Percentage of material with initial boiling point below 425 degrees Fahrenheit.

EVAPORATION RATE: Indicated as faster or slower than ETHYL ETHER, unless otherwise stated.

**SECTION IV
FIRE AND EXPLOSION DATA**

FLASH POINT: Method identified.

EXPLOSION LIMITS: For product if known. The lowest value of the components is listed for mixtures.

HAZARDOUS DECOMPOSITION PRODUCTS: Known or expected hazardous products resulting from heating, burning or other reactions.

SECTION IV (cont.)

EXTINGUISHING MEDIA: Following National Fire Protection Association criteria.

FIREFIGHTING PROCEDURES: Minimum equipment to protect firefighters from toxic products of vaporization, combustion or decomposition in fire situations. Other firefighting hazards may also be indicated.

SPECIAL FIRE AND EXPLOSION HAZARDS: States hazards not covered by other sections.

NFPA CODES: Hazard ratings assigned by the National Fire Protection Association.

**SECTION V
HEALTH HAZARD DATA**

PERMISSIBLE EXPOSURE LIMIT: For product.

THRESHOLD LIMIT VALUE: For product.

EFFECTS OF ACUTE OVEREXPOSURE: Potential local and systemic effects due to single or short term overexposure to the eyes and skin or through inhalation or ingestion.

EFFECTS OF CHRONIC OVEREXPOSURE: Potential local and systemic effects due to repeated or long term overexposure to the eyes and skin or through inhalation or ingestion.

FIRST AID: Procedures to be followed when dealing with accidental overexposure.

PRIMARY ROUTE OF ENTRY: Based on properties and expected use.

**SECTION VI
REACTIVITY DATA**

HAZARDOUS POLYMERIZATION: Conditions to avoid to prevent hazardous polymerization resulting in a large release of energy.

STABILITY: Conditions to avoid to prevent hazardous or violent decomposition.

INCOMPATIBILITY: Materials and conditions to avoid to prevent hazardous reactions.

**SECTION VII
SPILL OR LEAK PROCEDURES**

Reasonable precautions to be taken and methods of containment, clean-up and disposal. Consult federal, state and local regulations for accepted procedures and any reporting or notification requirements.

**SECTION VIII
PROTECTIVE EQUIPMENT TO BE USED**

Protective equipment which may be needed when handling the product.

**SECTION IX
SPECIAL PRECAUTIONS OR OTHER COMMENTS**

Covers any relevant points not previously mentioned.

ADDITIONAL COMMENTS

Containers should be either reconditioned by CERTIFIED firms or properly disposed of by APPROVED firms. Disposal of containers should be in accordance with applicable laws and regulations. "EMPTY" drums should not be given to individuals. Serious accidents have resulted from the misuse of "EMPTIED" containers (drums, pails, etc.). Refer to Sections IV and IX.

9.02 In accordance with the instructions, complete the following table for each activity in which you engage.

CBI

☐

a.	b.	c.	d.	e.
<u>Activity</u>	<u>Process Category</u>	<u>Yearly Quantity (kg)</u>	<u>Total Workers</u>	<u>Total Worker-Hours</u>
Manufacture of the listed substance	Enclosed	- 0 -	- 0 -	- 0 -
	Controlled Release	- 0 -	- 0 -	- 0 -
	Open	- 0 -	- 0 -	- 0 -
On-site use as reactant	Enclosed	- 0 -	- 0 -	- 0 -
	Controlled Release	2,800	5	174
	Open	- 0 -	- 0 -	- 0 -
On-site use as nonreactant	Enclosed	- 0 -	- 0 -	- 0 -
	Controlled Release	- 0 -	- 0 -	- 0 -
	Open	- 0 -	- 0 -	- 0 -
On-site preparation of products	Enclosed	- 0 -	- 0 -	- 0 -
	Controlled Release	- 0 -	- 0 -	- 0 -
	Open	- 0 -	- 0 -	- 0 -

☐ Mark (X) this box if you attach a continuation sheet.

9.06 Complete the following table for each work area identified in question 9.05, and for each labor category at your facility that encompasses workers who may potentially come in contact with or be exposed to the listed substance. Photocopy this question and complete it separately for each process type and work area.

CBI

☐ Process type Production of Pliogrip 6000 Prepolymer

Work area 2 (Processing Area)

Labor Category	Number of Workers Exposed	Mode of Exposure (e.g., direct skin contact)	Physical State of Listed Substance ¹	Average Length of Exposure Per Day ²	Number of Days per Year Exposed
B	25	Direct Skin Contact	OL	D	60
B	25	Inhalation	GU	D	60
C	3	Direct Skin Contact	OL	B	60
C	3	Inhalation	GU	B	60

¹Use the following codes to designate the physical state of the listed substance at the point of exposure:

GC = Gas (condensable at ambient temperature and pressure)
 GU = Gas (uncondensable at ambient temperature and pressure; includes fumes, vapors, etc.)
 SO = Solid

SY = Sludge or slurry
 AL = Aqueous liquid
 OL = Organic liquid
 IL = Immiscible liquid (specify phases, e.g., 90% water, 10% toluene)

²Use the following codes to designate average length of exposure per day:

A = 15 minutes or less
 B = Greater than 15 minutes, but not exceeding 1 hour
 C = Greater than one hour, but not exceeding 2 hours

D = Greater than 2 hours, but not exceeding 4 hours
 E = Greater than 4 hours, but not exceeding 8 hours
 F = Greater than 8 hours

☐ Mark (X) this box if you attach a continuation sheet.

9.06 Complete the following table for each work area identified in question 9.05, and for each labor category at your facility that encompasses workers who may potentially come in contact with or be exposed to the listed substance. Photocopy this question and complete it separately for each process type and work area.

CBI

☐ Process type Production of Pliogrip 6000 Prepolymer

Work area 3 (Quality Control Lab)

Labor Category	Number of Workers Exposed	Mode of Exposure (e.g., direct skin contact)	Physical State of Listed Substance ¹	Average Length of Exposure Per Day ²	Number of Days per Year Exposed
B	25	Direct Skin Contact	OL	A	65
B	25	Inhalation	GU	A	65
C	3	Direct Skin Contact	OL	B	65
C	3	Inhalation	GU	B	65
D	6	Direct Skin Contact	OL	C	65
D	6	Inhalation	GU	C	65

¹Use the following codes to designate the physical state of the listed substance at the point of exposure:

GC = Gas (condensable at ambient temperature and pressure)
 GU = Gas (uncondensable at ambient temperature and pressure; includes fumes, vapors, etc.)
 SO = Solid

SY = Sludge or slurry
 AL = Aqueous liquid
 OL = Organic liquid
 IL = Immiscible liquid (specify phases, e.g., 90% water, 10% toluene)

²Use the following codes to designate average length of exposure per day:

A = 15 minutes or less
 B = Greater than 15 minutes, but not exceeding 1 hour
 C = Greater than one hour, but not exceeding 2 hours

D = Greater than 2 hours, but not exceeding 4 hours
 E = Greater than 4 hours, but not exceeding 8 hours
 F = Greater than 8 hours

☐ Mark (X) this box if you attach a continuation sheet.

9.06 Complete the following table for each work area identified in question 9.05, and for each labor category at your facility that encompasses workers who may potentially come in contact with or be exposed to the listed substance. Photocopy this question and complete it separately for each process type and work area.

CBI

☐ Process type Production of Pliogrip 6000 Prepolymer

Work area 4 (Storage and Shipping Area)

Labor Category	Number of Workers Exposed	Mode of Exposure (e.g., direct skin contact)	Physical State of Listed Substance ¹	Average Length of Exposure Per Day ²	Number of Days per Year Exposed
A	3	Direct Skin Contact	OL	E	260
A	3	Direct Skin Contact	GU	E	260

¹Use the following codes to designate the physical state of the listed substance at the point of exposure:

GC = Gas (condensable at ambient temperature and pressure)
 GU = Gas (uncondensable at ambient temperature and pressure; includes fumes, vapors, etc.)
 SO = Solid

SY = Sludge or slurry
 AL = Aqueous liquid
 OL = Organic liquid
 IL = Immiscible liquid (specify phases, e.g., 90% water, 10% toluene)

²Use the following codes to designate average length of exposure per day:

A = 15 minutes or less
 B = Greater than 15 minutes, but not exceeding 1 hour
 C = Greater than one hour, but not exceeding 2 hours

D = Greater than 2 hours, but not exceeding 4 hours
 E = Greater than 4 hours, but not exceeding 8 hours
 F = Greater than 8 hours

☐ Mark (X) this box if you attach a continuation sheet.

PART C ENGINEERING CONTROLS

9.12 Describe the engineering controls that you use to reduce or eliminate worker exposure to the listed substance. Photocopy this question and complete it separately for each process type and work area.

CBI

[] Process type Production of Pliogrip 6000 Prepolymer

Work area 2 (Processing Area)

<u>Engineering Controls</u>	<u>Used (Y/N)</u>	<u>Year Installed</u>	<u>Upgraded (Y/N)</u>	<u>Year Upgraded</u>
Ventilation:				
Local exhaust	<u>Y</u>	<u>1979</u>	<u>N</u>	<u>NA</u>
General dilution	<u>Y</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>
Other (specify) _____	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>
Vessel emission controls	<u>N</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>
Mechanical loading or packaging equipment	<u>N</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>
Other (specify) _____				
<u>Discontinued Use</u>	<u>Y</u>	<u>1988</u>	<u>NA</u>	<u>NA</u>

[] Mark (X) this box if you attach a continuation sheet.

PART C ENGINEERING CONTROLS

9.12 Describe the engineering controls that you use to reduce or eliminate worker exposure to the listed substance. Photocopy this question and complete it separately for each process type and work area.

CBI

☐ Process type Production of Pliogrip 6000 Prepolymer
Work area 3 (Quality Control Lab)

<u>Engineering Controls</u>	<u>Used (Y/N)</u>	<u>Year Installed</u>	<u>Upgraded (Y/N)</u>	<u>Year Upgraded</u>
Ventilation:				
Local exhaust	<u>Y</u>	<u>1979</u>	<u>Y</u>	<u>1983</u>
General dilution	<u>Y</u>	<u>1974</u>	<u>N</u>	<u>NA</u>
Other (specify) _____	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>
Vessel emission controls	<u>N</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>
Mechanical loading or packaging equipment	<u>N</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>
Other (specify) <u>Discontinued Use</u>	<u>Y</u>	<u>1988</u>	<u>NA</u>	<u>NA</u>

☐ Mark (X) this box if you attach a continuation sheet.

PART C ENGINEERING CONTROLS

9.12 Describe the engineering controls that you use to reduce or eliminate worker exposure to the listed substance. Photocopy this question and complete it separately for each process type and work area.

CBI

[] Process type Production of Pliogrip 6000 Prepolymer

Work area 4 (Storage and Shipping Area)

<u>Engineering Controls</u>	<u>Used (Y/N)</u>	<u>Year Installed</u>	<u>Upgraded (Y/N)</u>	<u>Year Upgraded</u>
Ventilation:				
Local exhaust	N	NA	NA	NA
General dilution	Y	NA	NA	NA
Other (specify) _____	NA	NA	NA	NA
Vessel emission controls	N	NA	NA	NA
Mechanical loading or packaging equipment	N	NA	NA	NA
Other (specify) Discontinued Use	Y	1988	NA	NA

☐ Mark (X) this box if you attach a continuation sheet.

9.13 Describe all equipment or process modifications you have made within the 3 years prior to the reporting year that have resulted in a reduction of worker exposure to the listed substance. For each equipment or process modification described, state the percentage reduction in exposure that resulted. Photocopy this question and complete it separately for each process type and work area.

CBI

☐ Process type Production of Pliogrip 6000 Prepolymer

Work area 2 (Processing Area)

<u>Equipment or Process Modification</u>	<u>Reduction in Worker Exposure Per Year (%)</u>
<u>Discontinued Use of Listed Substance</u>	<u>100%</u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>

☐ Mark (X) this box if you attach a continuation sheet.

9.13 Describe all equipment or process modifications you have made within the 3 years prior to the reporting year that have resulted in a reduction of worker exposure to the listed substance. For each equipment or process modification described, state the percentage reduction in exposure that resulted. Photocopy this question and complete it separately for each process type and work area.

CBI

☐ Process type Production of Pliogrip 6000 Prepolymer

Work area 3 (Quality Control Lab)

<u>Equipment or Process Modification</u>	<u>Reduction in Worker Exposure Per Year (%)</u>
<u>Discontinued Use of Listed Substance</u>	<u>100%</u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>

☐ Mark (X) this box if you attach a continuation sheet.

9.13 Describe all equipment or process modifications you have made within the 3 years prior to the reporting year that have resulted in a reduction of worker exposure to the listed substance. For each equipment or process modification described, state the percentage reduction in exposure that resulted. Photocopy this question and complete it separately for each process type and work area.

CBI

☐ Process type Production of Pliogrip 6000 Prepolymer

Work area4 (Storage and Shipping Area)

<u>Equipment or Process Modification</u>	<u>Reduction in Worker Exposure Per Year (%)</u>
<u>Discontinued Use of Listed Substance</u>	<u>100%</u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>

☐ Mark (X) this box if you attach a continuation sheet.

PART D PERSONAL PROTECTIVE AND SAFETY EQUIPMENT

9.14 Describe the personal protective and safety equipment that your workers wear or use in each work area in order to reduce or eliminate their exposure to the listed substance. Photocopy this question and complete it separately for each process type and work area.

CBI

☐ Process type Production of Pliogrip 6000 Prepolymer

Work area 2 (Processing Area)

<u>Equipment Types</u>	<u>Wear or Use (Y/N)</u>
Respirators	<u>Y</u>
Safety goggles/glasses	<u>Y</u>
Face shields	<u>N</u>
Coveralls	<u>N</u>
Bib aprons	<u>Y</u>
Chemical-resistant gloves	<u>Y</u>
Other (specify)	
_____	_____
_____	_____

☐ Mark (X) this box if you attach a continuation sheet.

PART D PERSONAL PROTECTIVE AND SAFETY EQUIPMENT

9.14 Describe the personal protective and safety equipment that your workers wear or use in each work area in order to reduce or eliminate their exposure to the listed substance. Photocopy this question and complete it separately for each process type and work area.

CBI

☐ Process type Production of Pliogrin 6000 Prepolymer

Work area 3 (Quality Control Lab)

<u>Equipment Types</u>	<u>Wear or Use (Y/N)</u>
Respirators	<u>Y</u>
Safety goggles/glasses	<u>Y</u>
Face shields	<u>N</u>
Coveralls	<u>N</u>
Bib aprons	<u>N</u>
Chemical-resistant gloves	<u>N</u>
Other (specify)	
<u>Lab Coats</u>	<u>Y</u>
_____	_____

☐ Mark (X) this box if you attach a continuation sheet.

PART D PERSONAL PROTECTIVE AND SAFETY EQUIPMENT

9.14 Describe the personal protective and safety equipment that your workers wear or use in each work area in order to reduce or eliminate their exposure to the listed substance. Photocopy this question and complete it separately for each process type and work area.

CBI

☐ Process type Production of Pliogrip 6000 Prepolymer

Work area 4 (Storage and Shipping Area)

<u>Equipment Types</u>	<u>Wear or Use (Y/N)</u>
Respirators	<u>N</u>
Safety goggles/glasses	<u>Y</u>
Face shields	<u>N</u>
Coveralls	<u>N</u>
Bib aprons	<u>N</u>
Chemical-resistant gloves	<u>N</u>
Other (specify)	
_____	_____
_____	_____

☐ Mark (X) this box if you attach a continuation sheet.

PART E WORK PRACTICES

- 9.19 Describe all of the work practices and administrative controls used to reduce or eliminate worker exposure to the listed substance (e.g., restrict entrance only to authorized workers, mark areas with warning signs, insure worker detection and monitoring practices, provide worker training programs, etc.). Photocopy this CBI question and complete it separately for each process type and work area.

☐

Process type Production of Pliogrip 6000 Prepolymer

Work area 2 (Processing Area)

1. Discontinued Use of Listed Substance During Fiscal 1988
2. Worker Training Programs
3. Provide Respirator Protection
4. Provide Protective Clothing (Gloves, Safety Glasses/Goggles, Aprons)

-
- 9.20 Indicate (X) how often you perform each housekeeping task used to clean up routine leaks or spills of the listed substance. Photocopy this question and complete it separately for each process type and work area.

Process type Production of Pliogrip 6000 Prepolymer

Work area 2 (Processing Area)

<u>Housekeeping Tasks</u>	<u>Less Than Once Per Day</u>	<u>1-2 Times Per Day</u>	<u>3-4 Times Per Day</u>	<u>More Than 4 Times Per Day</u>
Sweeping	<u>X</u>	<u> </u>	<u> </u>	<u> </u>
Vacuuming	<u>X</u>	<u> </u>	<u> </u>	<u> </u>
Water flushing of floors	<u>X</u>	<u> </u>	<u> </u>	<u> </u>
Other (specify)				
<u>Leaks or spills of TDI are handled immediately.</u>				

☐ Mark (X) this box if you attach a continuation sheet.

PART E WORK PRACTICES

- 9.19 Describe all of the work practices and administrative controls used to reduce or eliminate worker exposure to the listed substance (e.g., restrict entrance only to authorized workers, mark areas with warning signs, insure worker detection and monitoring practices, provide worker training programs, etc.). Photocopy this question and complete it separately for each process type and work area.

CBI

☐

Process type Production of Pliogrip 6000 Prepolymer

Work area 3 (Quality Control Lab)

1. Discontinued Use of Listed Substance During Fiscal 1988

2. Worker Training Programs

3. Provide Respirator Protection

4. Provide Protective Clothing (Safety Glasses, Lab Coats)

5. Other Protective Equipment Available if Needed

- 9.20 Indicate (X) how often you perform each housekeeping task used to clean up routine leaks or spills of the listed substance. Photocopy this question and complete it separately for each process type and work area.

Process type Production of Pliogrip 6000 Prepolymer

Work area 3 (Quality Control Lab)

<u>Housekeeping Tasks</u>	<u>Less Than Once Per Day</u>	<u>1-2 Times Per Day</u>	<u>3-4 Times Per Day</u>	<u>More Than 4 Times Per Day</u>
Sweeping	<u>X</u>	<u></u>	<u></u>	<u></u>
Vacuuming	<u>X</u>	<u></u>	<u></u>	<u></u>
Water flushing of floors	<u>X</u>	<u></u>	<u></u>	<u></u>
Other (specify)				
<u>Leaks or spills of TDI are handled immediately.</u>				

☐ Mark (X) this box if you attach a continuation sheet.

PART E WORK PRACTICES

- 9.19 Describe all of the work practices and administrative controls used to reduce or eliminate worker exposure to the listed substance (e.g., restrict entrance only to authorized workers, mark areas with warning signs, insure worker detection and monitoring practices, provide worker training programs, etc.). Photocopy this question and complete it separately for each process type and work area.

CBI

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Process type Production of Pliogrip 6000 Prepolymer
Work area 4 (Storage and Shipping Area)

1. Discontinued Use of Listed Substance During Fiscal 1988
2. Worker Training Programs
3. Provide Safety Glasses
4. Other Protective Equipment Available if Needed

- 9.20 Indicate (X) how often you perform each housekeeping task used to clean up routine leaks or spills of the listed substance. Photocopy this question and complete it separately for each process type and work area.

Process type Production of Pliogrip 6000 Prepolymer
Work area 4 (Storage and Shipping Area)

<u>Housekeeping Tasks</u>	<u>Less Than Once Per Day</u>	<u>1-2 Times Per Day</u>	<u>3-4 Times Per Day</u>	<u>More Than 4 Times Per Day</u>
Sweeping	<u>X</u>	<u></u>	<u></u>	<u></u>
Vacuuming	<u>X</u>	<u></u>	<u></u>	<u></u>
Water flushing of floors	<u>X</u>	<u></u>	<u></u>	<u></u>
Other (specify)				
<u>Leaks or spills of TDI are handled immediately.</u>				

☐ Mark (X) this box if you attach a continuation sheet.